

# The Mining Journal,

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1357.—VOL. XXXI.

London, Saturday, August 24, 1861.

STAMPED.....SIXPENCE.  
UNSTAMPED..FIVEPENCE.

**M. R. JAMES CROFTS, SHAREBROKER,**  
No. 1, FINCH LANE, CORNHILL. (Established 17 years.)  
Mr. Crofts is a BUYER of shares in the following mines (cash on receipt of transfer, or exchanges made for other shares):—Bryndown Hall, Herward United, Great Martha, West Caradon, Great South Tolgas, Herdfoot, Wheal Norris, Marke Valley, North Minera, North Downs, and Wheal Grylls, Carr Camborne, South Minera.

The following FOR ABSOLUTE SALE, all calls paid, Mr. Crofts having no limits:—25 Rosewarne and Herland, 100 Worras Downs, 20 East Tresekby, 20 North Buller, 40 Penhale Moor, 20 Cornubia.

The section of the late Lamerhore Wheel Maria Mine, now leased by the EAST WHEAL MARTHA COMPANY, in 6000 shares, has excellent chances of success. Mr. Crofts having acted as secretary to the Lamerhore for nearly ten years is acquainted with the merits of the new mine, and will answer enquiries from the investing public.

\* Holders of mining shares DIFFICULT OF SALE in the OPEN MARKET may hear of purchasers, and also parties IN ARREAR OF CALLS, or sued by merchants, may learn their true legal position and be advised how to act, by applying to Mr. Crofts, SPECIAL BUSINESS in EAST WHEAL MARTHA (LIMITED) paid-up shares, £2 10s. each.

**M. R. JAMES LANE, No. 44, THREADNEEDLE STREET, LONDON, E.C.**

JAMES LANE has FOR SALE, at net prices:—20 Alfred Consols, £1; 5 Billings, £18; 20 Crebore, 12s.; 60 Devon Union; 2 Ding Dong, £15; 50 Dale, 15s. 6d.; 10 East Caradon, £25 1/2; 10 East Russell, £3 1/2; 20 Great Wheal Martha, 34s.; 20 Great Retallack, 21s.; 5 Gonamens, £2 1/2; 2 Herdfoot, £30; 2 Kilmyr, £25; 20 Lady Bertha, 16s.; 5 Ludecott, £3 1/2; 2 Mary Ann, £9; 10 Marke Valley, £10 1/2; 20 North Halloweagle (£1 paid), 21s.; 20 North Downs, £4 1/2; 20 North Nant-y-Mwyn, 5s.; 2 Pant-y-buarth, £6 1/2; 20 Penhale Moor, £1 1/2; Rosewarne Consols; 20 South Cornwall, 9s. 6d.; 2 Trelewany, £1 1/2; 2 Wheal Heart, 29; 2 West Caradon, £36; Wheal Anne, 26s.; 20 Ribden, 5s.; 20 Sortridge, 12s.; and 5 West Rhosamar, £2 1/2.

Mr. Lane has 20 shares in Turner's Patent Mill Strap Company (Limited), £5 paid, for which he solicits an offer.

**THE ADVANCE in the PRICE of COPPER has had a beneficial effect on the Mining Market, and caused a considerable enquiry for shares, not only amongst those that had been depressed, but for others that had remained firm of late. An advance has consequently ensued in the price of shares, the scarcity of stock preceding the completion of numerous orders with limits, whilst the rise is accelerated by many speculative individuals (who had bona fide sold with the expectation of repurchasing at less) being amongst those who are offering higher prices to repossess their stock. Intending purchasers are advised to buy for cash, and to insist upon an immediate completion of the transactions, for it has been uniformly obvious to holders of mining property of late that the recent depression has been very materially increased and aided by permitting business to be done with, and by, the advocates of the account business, and thus enable the bearing dealers to succeed with impunity. Judging by the indications of the few past days, the buoyancy of the market is likely to be considerably maintained, and those immediately purchasing will doubtless derive ample profits for the outlay. Shares in the following procured either on commission or at nett prices (if practicable), at the option of the purchaser; but applicants, to avoid the loss likely to arise from the delay in correspondence on a rising market, are advised to send positive instructions with limits at first:—Basset, South Francis, West Caradon, West Seton, Wheal Seton, East Bassett, East Camborne, St. Ives, Wheal Margaret, Providence, Wheal Mary, Wheal Trelewany, Wheal Mary Ann, North Roskear, or any other mine known in the London market.**

Sales effected on the above terms for cash.

Bankers: London and Westminster Bank, Lothbury.

JAMES B. BRENCHEY, Sharedealer, 75, Old Broad-street,

London, E.C., Aug. 23, 1861.

**PETER WATSON, ENGLISH AND FOREIGN STOCK, SHARE, AND MINING OFFICES,**  
79, OLD BROAD STREET, LONDON, E.C.

Telegraphic messages to Buy or Sell Mine Shares punctually attended to.

**MR. PETER WATSON has returned from Cornwall, and has given a full account of mines in his "WEEKLY MINING CIRCULAR AND SHARE LIST" of yesterday (with recommendations as to the best and cheapest mines for immediate investment), which can be had on application.**

79, Old Broad-street, London, E.C.

**SHARES WANTED FOR IMMEDIATE CASH PAYMENT:—**

25 Stray Park, 50 Wheal Charlotte, 100 Kelly Bray.

1 Carn Brea, 25 New Francis, 35 West Wh. Providence.

35 Wheal Grylls, 5 East Bassett, 50 S. Caradon Wh. Hooper.

40 Rose Hill & Ransom U. 10 West Caradon.

Application to PETER WATSON, stating lowest price.

**STRAY PARK MINE.—Several shareholders having been lately intimidated to sell their shares at ridiculously low prices, some having been done at £24, and below, a word of caution and advice to others may not be out of place.—Have the mine inspected. The shares leave off Friday night at £22, "buyers"; and if reports be true these shares are likely to be as high as ever they were—some months ago at £26. The mine adjoins Dolcoath, and on the same lodes.**

**M. R. W. LELEAN, MINE SHAREBROKER,**  
11, ROYAL EXCHANGE, LONDON, E.C.

**MR. J. S. PHILLIPS, C.E. AND M.E., SHAREBROKER, &c.,**  
12, ST. MICHAEL'S ALLEY, CORNHILL, LONDON, is now on a tour through the Cornish mines.

**MR. T. ROSEWARNE begs to inform his friends that he has REMOVED from 81 to 75, OLD BROAD STREET, LONDON, E.C.**

**T. ROSEWARNE has FOR SALE:—**

Drake Walls, 15s. 6d. Herdfoot, £35.

East Russell, £3 1/2. Lady Bertha, 17s.

East Caradon, £25 1/2. North Robert, 16s.

East Devon Consols, 40s. North Tresekby, £22.

East Grenville, 29s. North Downs, £4 1/2.

Cawton United, 4s. North Trelawny, 4s. 6d.

Gribble & St. Aubyn, £12. North Minera, 30s.

Hington, 40s. So. Caradon Hooper, 25s.

Okei Tor, 30s. Stray Park, £32.

Fowey and Par, 11s. 3d. Sortridge, 12s.

An OFFER WANTED for—Calstock Consols.

Broadwood.

T. ROSEWARNE can recommend six mines safe for a great rise within six months.

Bankers: Bank of London.

**GEORGE RICE, SHAREBROKER, 1, FINCH LANE,**  
CORNHILL, can BUY or SELL for cash or account, close prices:—

Great Retallack, 50 Long Rake; 4 Herward United, £11; 50 North Minera,

50 Ludecott, £3 1/2; 4 Great Fortune, £11 1/2.

50 West Rose Down, £21; 20 Volvadon, £2 1/2; 50 Unity, 21s.

50 Alfred Consols, 21s. 50 Unity, 21s. (wanted).

Mr. JACKMAN is a BUYER of Stinx Park, Carn Brea, Uny, and West Caradon.

Aug. 23, 1861. Bankers: London and Westminster, Lothbury.

**MR. R. H. M. JACKMAN, MINING AND SHAREBROKER,**  
No. 2, ADAM'S COURT, OLD BROAD STREET, E.C.

Has FOR SALE, free of commission:—

20 North Downs, £4 1/2; 30 Wheal Wrey, 5s. 6d.

20 Ludecott, £3 1/2; 4 Great Fortune, £11 1/2.

50 West Rose Down, £21; 20 Volvadon, £2 1/2; 50 Unity, 21s.

50 Alfred Consols, 21s. 50 Unity, 21s. (wanted).

Mr. JACKMAN is a BUYER of Stinx Park, Carn Brea, Uny, and West Caradon.

Aug. 23, 1861. Bankers: London and Westminster, Lothbury.

**MR. E. GOMPERS. MINING OFFICES,**  
3, CROWN CHAMBERS, THREADNEEDLE STREET, LONDON, E.C.

BUSINESS TRANSACTED in BRITISH and FOREIGN STOCKS and SHARES.

Terms, 1 1/4 per cent.—Bankers: London and Westminster Bank.

**MR. GEORGE BUDGE, SHAREBROKER, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C.** (Established 14 years), has FOR SALE the following shares:—3 Long Rake; 4 Herward United, £11; 50 North Minera, £2 1/2; 10 Great Tredeev, 16s.; 4 Old Tolgas United, £12 1/2; 25 Volvadon, £3 1/2; 50 East Wheal Martha (fully paid); 50 Lady Bertha, 17s.; 50 West South Caradon, 28s. 6d.; 25 Trelawny, £3 1/2; 50 Wheal Moyle; 50 Great Wheal Martha; 60 East Grenville, 40s. 6d.; 25 Trelawny, £3 1/2; 100 East Rosewarne; 50 Ribden, 4s. 9d.; 5 Marky.

Great Retallack, 19s. 6d.; 25 Merlyn, 20s.; 5 Bryndown Hall; 10 Camborne Vein; 1

South Francis, £12 1/2; 10 Tincroft, £3 1/2; 5 Wheal Heart; 50 Wheal Arthur, 9s.

20 North Bassett; 50 West Polmear, £1; 2 Wheal Seton, £6 9d.; 1 Wheal Bassett, £8 2s.

50 Buller and Bassett; 2 Bryn Gwlog, £28 1/2; 200 Silver Vein; 20 Pendene, £3 1/2; 20 Xangli.

Mining shares difficult of sale, the holders may find purchasers through Mr. Budge.

Daily lists of prices forwarded on application.

**G E O R G E M O O R E,**  
1, CROWN COURT, THREADNEEDLE STREET.

GEORGE MOORE will SELL the following SHARES, or any part, to-day, at quoted prices, FREE OF ANY COMMISSION:—

50 East Grenville, 37s. 9d.; 100 North Minera (£1 paid, 100 So. Condurrow, 9s. 3d.

45 East Rosewarne, £1 1/2. Limited, 22s. 3d.

100 Wh. Grenville, 33s. 9d.

George Moore is a BUYER of one or two shares in West Seton, at £300.

In any business that GEORGE MOORE is favoured with, in which he is the buyer, he will give CASH ON RECEIPT OF TRANSFER.

100 So. Condurrow, 12s. 6d.

50 South Caradon Hooper, 1 South Caradon, £30 2s.

1 St. Ives Cons., £31.

50 Sortridge Cons., 11s. 6d.

30 St. Day, 12s. 6d.

1 So. Bryn Gwlog, £13 1/2.

1 South Bassett, £12.

1 South Wheal Frances, £12 1/2.

2 Silver Rake, £17.

30 Tinctor, £5 8s. 6d.

30 Silver Bank (20s. paid), 13s. 6d.

2 Trelewany, £14.

40 Trumpet United, 8s. 6d.

10 Trelawny, £3 1/2.

10 Wheal Harriet, 29s. 6d.

10 Wheal Harriet, 29s. 6d.

10 Wheal Trelawny, £4.

10 Wheal Tresekby, 21s.

10 Wheal Tresekby, 2

## Original Correspondence.

PRACTICAL PAPERS ON COLLIERIES OPERATIONS—No. XI.  
REMARKS ON FAULTS, DISLOCATIONS OF STRATA, &c., IN CONNECTION  
WITH THE WORKING OF COLLIERIES.

SIR.—The subject under consideration is one that may be considered to belong to the science of geology, but as no series of papers on practical mining could be considered complete without embracing this subject, and as very little information of a really practical nature concerning faults is to be found in works on geology, I have been emboldened to offer the following remarks, and in so doing will try to give information of that kind that may be of service to those having to conduct mining operations.

First, I would remark that faults differ in their character in almost every locality, and consequently no general rule can be laid down for crossing faults, or recovering the coal, in the most economical manner, when it has been thrown out of its position by a dislocation; and I may further remark that some coal fields are much freer from faults than others, and that the greatest possible difference exists in the same coal field. It is true that some of the large faults are well defined, and can be traced with great regularity for a distance, in some instances, of 30 or 40 miles. I have seen a level exceeding 2000 yards in length with not the slightest fault or hitch in the whole distance; and in the same coal field, in driving a distance of 1000 yards, five distinct and separate faults, all downthrows to the south-west, have been met with, and in the aggregate the distance that the coal was thrown down exceeded 150 yards, which was pretty equally divided amongst the five faults. It is as well to remark that this portion of the coal field bears unmistakeable proofs that it has been subjected to violent force, or contortion, since it was deposited in its position, the various seams of coal, and their accompanying strata, being almost vertical, as well as the millstone grit that the coal reposes upon. The mind of man appears to be unequal to the task of conceiving the vast period of time that has elapsed since the same spot was covered by a rank and luxuriant vegetation sufficient to produce a single seam of coal such as is to be found in the North Staffordshire coal field; but when we take into consideration the astounding fact that the aggregate thickness of the various seams of coal exceed 140 ft., and that from their high angle of inclination near to Congleton-edge, which is the apex of the triangle that forms this coal field, much may be added to their thickness when compared with seams lying almost horizontally.

It is enough to make the mind of the strongest grow dizzy, and be lost in the abyss of time, when making the attempt to conceive a period so remote as when the first seam of coal reared its head in the form of a huge forest, and felt the effects of the rays of a tropical sun. The task of accounting for, or even conceiving, the subsequent changes that have taken place since the first forest became submerged is still more difficult, but it is easy and clear to see that some immeasurable force has been required to raise the upper seams of coal in this locality more than 1000 ft. above the level of the sea. Other peculiar features are also to be found in this coal field: the strata and seams of coal undergo a complete curvature, so as to change the line of level from 45° or 50° south-west and north-east to nearly due north and south. On one side of the fault that produces this change the coal is found at an angle of inclination of 50° and upwards, and on the other side at an angle not exceeding 18° or 20°, sometimes much below this. The change is wrought in such a small area, that sometimes coal is worked from the same shaft at both angles of inclination. In another district that I am acquainted with, which extends over several miles, the peculiarity exists of all the faults being downthrows to the south-west to a certain point, and from that point all being upthrows in the same direction. It is hardly necessary to say that when numerous faults are met with they greatly lessen the profits of working; in fact, that they are one of the greatest drawbacks that a colliery can have.

Those who are unacquainted with mining may easily conceive the disadvantage arising from driving the wagon-roads through rock instead of coal; yet this is not the greatest disadvantage that is to be found in connection with faults. They have, however, their advantages, as it often happens that mines are brought into workable depths by a fault or upthrow, when if no such thing had happened the angle of inclination or dip of the mine would have carried the seams far below workable depths. They also often serve to keep the water from draining from one colliery to another, and even from different parts of the same colliery. If it is intended to discontinue working one part of a colliery before the other, faults are sometimes left uncultivated, for no other purpose than to keep back the water. And it is sometimes wise to adopt this course, and bear with the extra expense incurred by having extra shafts, engines, &c., rather than to connect a colliery so as to have to pump the whole of the water, whether one portion of the colliery is worked out 20 or 30 years before the other or not. Some collieries are detached by working up to a fault for each boundary, and when so the owners need be under no fear of having to pump the water of the adjoining colliery in the event of it ceasing working, as a very slight fault acts as an effectual barrier in keeping back almost any quantity of water. Sometimes faults are found of great magnitude, and bring into working position many mines that have cropped out (as it is technically termed) by a downthrow. One of the most remarkable faults of this kind is the Great Pendleton and Ringley Fault, near Manchester. This fault ranges along the course of the Irwell, and is a downthrow to the north-east of 1000 yards at the least. By this fault all the upper mines, that have cropped out over a considerable area, are again brought into position, and, as it were, an entirely new field presents itself at the point where nothing but the lower series of mines would have been met with had it not been for the fault referred to. On one side of the fault the lower mines in the middle series are being worked, and on the other side the uppermost series of mines in the kingdom are to be found. The change is wrought within the compass of 200 or 300 yards. There are several other large faults in the South Lancashire coal field, as well as in other coal fields, but the before-mentioned answers the purpose for which I introduced it—that of cautioning geologists and others against forming too hasty conclusions as to where certain seams of coal are and are not to be found, especially so when the faults are unattended with any of those physical changes that are often to be found on the surface.

It was long thought and asserted by the late Mr. Loonie, the geologist, and others that no coal was to be found within a reasonable distance of the north-east side of the Pendleton great fault, an idea that has since been proved to be erroneous, by coal having been found by Messrs. Stott and Ellam, by boring and subsequently by sinking.

It may not be amiss here to mention what the writer considers a phenomenon; at all events, it is an unusual occurrence, and one that ought to be known. On three different occasions, and in different localities, the upper seams of coal and strata have been regular in position, whilst an underscar has been altogether absent from the series. In one of the cases the roof and floor of the mine were there, but the coal absent; in the other two there were no traces that the position where the mines should have been could have been identified by.

It was long considered unnecessary, and is so yet by many, to bore for an under seam, and that no fear need be apprehended of the bottom mines being right if the upper ones are so; but, for my own part, I think it is necessary to take into consideration the probability of a mine being absent before either purchasing an estate or sinking shafts. In one of the cases referred to, two shafts were sunk and expensive machinery erected, it never being doubted that the mine they were sinking for would not be there. From what we can at present see, the whole of the middle and lower series of mines are absent in the Manchester coal field; at all events, they are not to be found at anything like the same distance below the upper series as they are found and worked at Pendleton and other places.

Sometimes a mere fissure is found, without the displacement of the rock that has been severed by the fissure; whilst at other times the miner comes in contact with a face of dirt, without meeting with the ordinary appearances of a fault, or being able to perceive any dislocation of the strata, or displacement of the coal, by either upthrow or downthrow. Sometimes the distance across the dirt that occupies the position that the coal should do is 6 or 8 yards, at other times not more than a few feet. Sometimes the whole seam of coal is absent for the distances named, and the roof and floor of the mine quite as regular as if the coal had been in its proper position, but in the majority of cases a few inches of coal is left at the roof of the mine. The stratum that is injected into the position that the coal should occupy is sometimes so soft that it might almost be dug out with a spade, although both the roof and floor of the mine are of very strong strata. At other times the injected strata are much stronger than either the floor or roof of the mine. These faults, if they may be so termed, are not of common occurrence, excepting in particular mines and localities. In one seam of coal in this locality they are found very frequently.

Another kind of fault that is occasionally found is what I should term

a wreck fault, and, as that term implies, they are composed of almost all kinds of sand, gravel, and stones from the northern drift, clay, and silt. The only one I have ever seen was found at a depth of 75 yards from the surface, and contained almost all conceivable kinds of sands, clay, marl, and stones. Stones with their edges rounded or worn by the rolling motion that had conveyed them from the spot where they had been fractured from some rock. Not the slightest appearance existed of stratification or even order; all appeared to have been heaped confusedly together. Some 40 or 50 yards were driven into it, and for the whole of that distance it presented the same appearance as described. In a seam of coal lying 8 or 10 ft. above the mine where the fault was found, and 5 yards more upon the deep, a level was driven 200 yards past the spot where the fault was found, without meeting with it; and a brow driven up the angle of the mine for a distance of 80 yards, and the coal worked back.

The faults that are usually met with are either what are technically termed upcasts or downcasts, which simply means that the coal and adjoining stratification have either been raised up or pressed downwards by a sudden movement, or by a succession of movements. With the slight information at our command upon this subject, it can only be conjectured how these changes have taken place, or by what means they have been occasioned. It certainly appears more rational that these displacements, or movements, should have taken place at certain intervals than that any upheaval, or depression, of 6000 ft. over any given area should have taken place by one movement. It very frequently happens that there is no difficulty whatever for a practised eye to detect at a glance whether the fault is an upcast or downcast, from its inclination. If it be a downcast, in the direction the level is being driven, the upper part of the fault will be the first to be met with, providing the face is vertical—or, in other words, the fault at the floor will underlie the fault at the roof, and vice versa for an upcast. I am now speaking of inclined faults, and, so far as I am able to speak from experience, this is an invariable rule; but occasionally faults are met with that are so nearly vertical that it becomes difficult to determine with accuracy by this rule. Then it is necessary to trust to the appearance which the striae, or slickensides, presents. By careful examination of the slickensides of any fault, it will be seen that the surface presents a polished, irregular appearance, somewhat resembling that of the scales of a fish, one portion overlapping another in nearly the same manner. This appearance is doubtless caused by the enormous friction it has been subjected to at the time of its dislocation. By these appearances anyone who has carefully noticed the slickensides of a few faults will be able to determine the direction the dislocation has taken, and whether the mine has been upheaved or depressed. Sometimes faults are found that are upcasts from both sides, and may be compared in appearance to a triangle, the base of which is the floor of the mine, and the apex at the point where the coal is raised to. These kind of faults are seldom met with: the best plan of crossing one is to keep a straight course after it has been ascertained what kind of fault it is. But faults of such a character are very likely to mislead the most practised eye. The only plan that I know of to meet such cases is to thoroughly understand the nature of the strata overlying and underlying the various seams of coal, and vice versa for an upthrow.

In almost all instances the cheapest method of crossing a fault is to drive in the fault slip, or slickenside; but whenever this is done care should be taken that the road which is cut through should not be in the centre of the slip, or the coal may be passed without being noticed. This can only occur when the slip is some yards in width. I know a case where more than 1000 ft. was spent, in consequence of keeping in the middle of the slip, and the coal not found at last; in fact, they became quite confused in what they were doing: the coal has since been found. I have an objection to crossing a fault by driving with the slip, for though it is the shortest way that one can be crossed, and the ground is often a deal better to cut, these advantages are more than counterbalanced by the difficulty that exists in most cases to keep the roof from falling. The plan I have found to answer the best has been, when I have known the extent of the fault from having previously crossed it, if it be a downthrow to come back along the level for 8 or 10 yards, as the case might be, and turn into the higher side, so as to make the curve of the wagon-road more regular.

I may at no distant period enter into this subject at considerable length, and hope that others will be induced to do the same, as from the great want of knowledge upon a subject so important, both in a scientific and practical point of view, it is highly necessary that more should be known than is at present. I consider it of importance that the bearing of each fault, with its angle of inclination and distance of upthrow and downthrow, as the case may be, whether a parallel fault or not, should be deposited with some of our geological societies or mining schools. Many warm-minded individuals will, I am aware, object to this suggestion, but I am inclined to think that all who are desirous of forwarding the interests of practical mining would gladly acquiesce, provided the matter were fairly put before them.

Jos. GOODWIN.

## RATING OF COLLIERIES.

SIR.—The mode of rating collieries to the poor becomes every year more annoying to the coalowners, in consequence, probably, of existing enactments placing them almost entirely in the hands of the assessors, to whose caprice, or want of experience in the valuation of colliery property, the unfortunate colliery owner has to submit. It is true he can appeal to the magistrates, and that in many cases he thus obtains relief; but this appears to me to be a large amount of unnecessary trouble, which might easily be avoided. I have observed from the frequent complaints of adventurers in metallic mines that although the law gives them exemption from taxation to the poor, many of them are compelled by the local authorities to pay poor rates. Now, what I would suggest is the co-operation of the adventurers in metallic mines with the owners of collieries, to obtain the total exemption of all mines, quarries, and mineral works from taxation. It has been stated upon indisputable official authority that 500,000 workmen engaged in mining produce no less than 40,000,000 ft. worth of marketable products, and it is universally admitted that it is impossible to find any other 40,000,000 ft. worth of products which are so prolific in the results they secure. Destroy the mining and metallurgical industries and our commercial position will be at once lost—we should have no fuel for our machinery, nor, indeed, machinery, except from imported metal, and the manufacture of such an immense number of products would be stopped that not a single individual in the country would escape the disadvantages of the change. Articles which few suppose to be in any way connected with metals would cease to be manufactured. I believe that if co-operation could be secured, and if the advantages resulting to the community at large from mining were fairly represented, there would be no difficulty in obtaining a clear and concise Act exempting all mines and places from which minerals or metallic ores are obtained.

COAL OWNER.

## ALUMINUM SAFETY-LAMPS.

SIR.—The proposition for employing the new metal aluminium as a substitute for iron in the manufacture of gauze for safety-lamps, is certainly one which will receive attention, from its evident novelty; but, from your remarks in last week's Journal, there appear to be several little points which require explanation. First, there is the statement that the white metal does not obstruct the light to the same extent as ordinary gauze; but I recollect that Mr. Reuben Plant patented a lamp which was to produce a very similar effect by employing white galvanised iron gauze. While the gauze continued white the amount of light was, no doubt, greater, but a very short period of use made the wire as black as any other. Will Mr. Bell state whether aluminium possesses any peculiar quality which prevents the smoke from settling upon it? If it does not, I cannot understand what advantage the new metal will possess. But this is, perhaps, the smallest objection to the use of aluminium for safety-lamps. The use of a metal costing 50s. per pound in ingots, and both difficult and expensive to draw into wire, is not one which would aid in producing a cheap lamp. But, assuming that the extreme lightness of the metal would admit of aluminium lamps being sold at as low a price as ordinary ones, there would still be the objection of the fusibility of the metal. I have seen it stated that the heat escaping from an ordinary Argand gas-burner is sufficient to keep the metal soft; and I should be glad to learn what Mr. Bell proposes to do to prevent the melting of his gauze in the event of the lamp being tilted, either accidentally or otherwise.

FERRUM.

Newcastle, Aug. 21.

WHITE GUNPOWDER.

SIR.—"A. Z." who writes respecting the danger attending the preparation and use of white gunpowder, states that he finds the best way to prepare it is to moisten the ingredients—chlorate of potash, yellow prussiate of potash, and sugar—before grinding them together, and then drying at a moderate heat. Having lately prepared different samples of white gunpowder for some military engineering experiments, I have tried the process

of separately grinding the materials and then mixing them, also the plan adopted by "A. Z." and find that all those samples which were prepared moist are more easily exploded than those prepared by the dry process. In fact, one sample prepared by the moist process, in an open porcelain vessel, exploded by simple friction with a spatula, with which one of my assistants (J. M. Kenyon) was crushing the dry powder. Through the explosion he was laid up for several weeks, and nearly lost his eyesight. No samples prepared dry are as explosive as those prepared moist, the addition of water causing the particles of the chemical substances to mix more intimately than can be effected by the dry process. This accounts for the greater danger attending the use of the white gunpowder prepared moist over that of the dry process. A cannon loaded with white gunpowder goes off on the application of a drop of vitriol to the touchhole. This property of the gunpowder may possibly be applied to some advantage in the construction and preparation of bombs for long ranges. The shells would not explode (if filled with white gunpowder and containing a glass vessel with vitriol) until they strike the object. No useless explosion of the shell could take place in the air, as is too often the case with the ordinary fuse shells. Its expansive or explosive force is also more than twice that of ordinary gunpowder. In all experiments performed with white gunpowder, prepared either by the wet or dry process, great care must be taken not to compress the powder too violently, otherwise serious accidents may occur.

F. HUDSON.

Laboratory, Corporation-street, Manchester.

## VOLCANIC ACTION.

SIR.—I beg leave to return my thanks to your correspondent, Mr. T. A. Barnes, Whitby, for his kind offer; on my next visit to that neighbourhood I shall avail myself of the opportunity of seeing what your correspondent calls a "calcining product, resulting from volcanic action in an ironstone bed." I have inspected the haematic and colitic ferruginous seams along the cliffs in the neighbourhood of Whitby, also the outcrops of the beds, and have seen the ordinary changes in the appearance of the ironstone near the surface, and what would be called by a Cornish miner "the gossans of the beds." These changes are more or less confined to the surface. When the ironstone becomes gradually dry, and somewhat viscid, the ferruginous water is decomposed, the hydrogen gas is evolved, and red and brown oxides are produced. The bog iron ore presents good examples of these superficial changes.

The superficial beds of hematite, and especially beds of manganese, are very productive in the mammillary and stalactitic forms. These forms are the flowers, or the fruits as it were, of the mineral rocks in and on which they grow. These productions lose all the water of crystallisation during the change, hence they become anhydrous; indeed, these changes may be detected going on a small scale on the sides of cuttings in ferruginous and calcareous sands in Northampton and many other places. However, as your correspondent thinks that he can show me "calcination resulting from volcanic action" near Whitby, I shall be curious to see it. I have been in volcanic regions, and have seen changes from volcanic action, both in the aqueous and the igneous volcanoes, therefore I shall be able to make comparisons. I hope Mr. Barnes is prepared to prove in a satisfactory manner, by means of the samples *in situ*, that the change observed has been produced by means of volcanic action, and that his opinion is not founded on mere assumption.

EVAN HOPKINS, C.E., F.G.S.

Dublin, Aug. 20.

## VOLCANIC ACTION.

SIR.—For the information of Mr. Evan Hopkins, as to the altered coal measures by the intrusion of liquid lava, I would inform him that there can be no doubt that the base of the whole of the South Staffordshire coal field (and, as I believe, nearly every other coal field) is IGNEOUS, which is clearly proved by several outbursts of trap to the surface, and then overlying (in the shape of a mushroom) the coal measures proper. Wherever this trap has burst up it has turned up the ends, or edges, of the different strata in its passage through to the surface, and where it is in contact with coal, or other bituminous matter, it has converted it into what is locally termed "black coal," or anthracite, and the ironstone is melted and vitrified, and has the appearance of modern blast-furnace cinder, or scoria. Besides this effect upon the coal and ironstone measures of the passage of trap from below direct to the surface, there are offshoots of trap that have struck off from the parent mass, or "neck," at from 50 to 150 yards from the surface, which have intruded themselves between the coal seams and ironstone beds for several miles—sometimes below a particular seam, at others above it, according as it met with an obstacle sufficient to turn its course when in a liquid state. Wherever this has taken place, and it is in contact or in close proximity to coal or ironstone, it has universally rendered the one anthracite and the other vitreous. This is called green rock (having that colour), and has a slightly different appearance to the parent mass from which it comes; where, however, there are smaller offshoots intruding into the coal itself, of only a few inches in thickness, resembling "steamed lightning," it then has the appearance of white rock. If Mr. Hopkins would like to see examples, I should be happy to show him, and you are at liberty to give him my address for that purpose.

ANTI-AQUEOUS.

A NEW ERA IN MINING—EXCAVATING MACHINERY.

SIR.—In the last number of the *Mining Journal* is a letter relating to Great Wheal Alfred, from a "Local Shareholder," from which I extract the following:

I believe that machinery may easily be brought to bear in the sinking of shafts especially, so that it shall not only be more expeditious, but also considerably less expensive; indeed, I see no practical obstacle to prevent shafts being sunk 10 or 12 fathoms in the time it would take to sink 1 fm.—I believe that a time will come when Cornish mines will be worked with profit more than double the depth of this mine, which mines will probably not only have engines but also employ horses underground, not using the latter, perhaps, in every level, but in the main levels, which levels, it is likely, will be wider and higher.—5. I believe that when the time alluded to comes mining will not be so much of a speculation, but that a greater certainty will be derived from it, because it will be a science better known; when it will not be considered so much as it is now that a "good mine makes a good captain," but more in the light of the speculation in shipping, where it is a well-known fact that a good captain will make a ship give profit, whereas a bad one will bring ruin to its owners. Now, if the time to which I have alluded ever takes place, the man who can see how to use, and does so, the appliances I have enumerated in their right place will be the man to have as manager in a deep and extensive mine.

Excepting the adoption of horses for underground work, where the principle of gravitation may be made available by the construction of the levels with sufficient gradients to discharge the stuff, either by inclines where the ground would permit of them, or just sufficiently steep as to roll the loaded wagons down with ease, and enable them to be brought back again empty, involving only a trifling amount of manual labour, I not only agree with the writer's belief as to the possibility of sinking shafts and driving levels by machinery, so as to supersede the tedious, expensive, and unsatisfactory use of manual labour in the excavation of the rock, but am now thoroughly prepared to bring its use into effective operation.

No one who has been much engaged in mining pursuits can fail to be aware that there is nothing more fatal to success in laying open and fully developing a mine than the time required for carrying out the underground operations, until at last it has become a general observation "that it requires three companies to make a profitable and paying mine." A rather painful experience of this evil has induced me for some years to devote particular attention to this important point, by endeavouring to ascertain if machinery could not be constructed to supersede the use of manual labour in sinking and driving, and latterly my time has been engrossed by this occupation, with, I am happy to say, the most satisfactory results, having at last succeeded in producing a machine (to be worked by steam power) to supply this great desideratum.

The cost of this machine for driving will, in the first instance, amount to 1500£, and with it I will guarantee to drive, at least, 1 fathom per diem (my firm belief being that it would drive 2 or 3 fathoms per diem). The cost of one for sinking (with winding-machinery attached to draw the stuff broken from the bottom of the shaft to the plat above, in order to keep the sump free for the sinking machinery) would be 2250£, and with the use of which I will undertake to sink a shaft from 150 to 200 fms. in 12 months.

After the construction of the first one they would necessarily be cheaper to make, but in order to get them adopted, I am quite willing, by way of a set-off against the first cost, to make the following proposition:—I have in my possession the grant of a most extensive and valuable tin sett, situated in one of the richest tin districts in Cornwall, and which, from the position of the lodes, should be worked by two separate engines, and, therefore, the underground workings would be divided into two mines, which we will call for the sake of distinction the north mine and the south mine. The north mine has been sunk 120 fathoms on a side lode, producing large and profitable returns of tin, but it has since been ascertained

that the main lode (which in the adjoining mine made several hundred thousand pounds profit) is only 30 fathoms distant from these workings, and all in whole ground to surface. This, besides other valuable lodes in the sett, could, therefore, be readily and speedily developed by cross-cuts with almost a certainty of profitable results. In the south mine there are various lodes of equal significance, and the main one of which in the adjoining mine has proved as rich as 5000 per fathom.

Now, in order to introduce this excavating machinery, I am quite willing to make over these mines, free of all charge (except legal charge), to any respectable parties who might undertake to work them, on condition that they take a machine for driving and extending the cross-cuts and levels in the north mine, and one for sinking, &c., in the south mine.

As an evidence of the value I attach to this property, and the capabilities of this new excavating machinery, I am also willing, if desired by the incoming parties, to work the main lode on tribute in the north mine on the following conditions:—The company to extend the adit level on the course of the main lode, make the requisite air shafts for ventilation, provide the necessary materials, clear and draw the stuff (as broken) to surface, and supply me with a driving-machine for every 20 fathoms in depth. I will (as the water is forked) cross-cut to the lodes, extend the levels at corresponding depths for 400 fathoms in distance, make the necessary winzes to connect the levels, and work the whole lode on a tribute of 10s. 6d. in £1. from the adit to 40 fathoms below the present bottom. In the south mine, I will not only drive the levels to the same extent on the main lode (after the adit level has been extended on it and the air shafts made), but will also include, on the same tribute and conditions, the sinking of the main shaft from the adit to 150 fathoms deep within 12 months. The company completing the shaft work, and bearing the water and other charges, as mentioned above.

This offer I will leave open for acceptance for 14 days from the present date. The merits of the property are fully confirmed by Capts. Thomas Martyn, Joseph Vivian, W. H. Reynolds, and James Pope, whose opinions and reports can be had on application to Mr. George Curtis at the address as under.

EDWARD S. CREASE.

17, Gracechurch-street, E.C., Aug. 23.

#### LOSS OF LIFE AMONGST CORNISH MINERS.

SIR.—No one conversant with miners and their exposure but will deplore the loss of life consequent on deficient ventilation, and the thousand and one ills to which miners are subject. But will a Government enquiry mend the matter? Or will a systematic Government inspection be anything but obstructive to that free action necessary for the carrying out of metallic mines? You strongly advocate an enquiry, but we cannot forget the issue of other enquiries; instance the late enquiry respecting salmon, and the danger arising from our sapient legislators' interference of shutting up some of the mines, of barring out the genus homo, that pisces species may flounder on undisturbed in streams again to be restored to their wonted limpidity. The great landowners in some districts in this country are pulling down houses wholesale, the nice little Fishery Bill just passed will give them a good opportunity of shutting up a few more of the mines, especially where the mineral rights are enjoyed by a different party from him who holds the soil, and a comfortable little enquiry more would be regarded as a godsend in some quarters where a restoration of the land to its pre-adamite silent solitude is regarded as the great end to be achieved.\*

Can we suppose that a Government enquiry alone will be of any use, or that it will be regarded as of any use, without being immediately followed by speedy legislation, by a Government and a Legislature that aspires to the regulation of every minutiae in domestic arrangement, and in all commercial enterprise, with so scrupulous an exactness as is now so ludicrously practised in the states of Germany? What could be the aim of a Government enquiry which should not be the forerunner of legislative enactment? But is any interference on the part of the Government necessary? Might this question not safely be left in the hands of the miners themselves? Have they not in the past 10 or 20 years made as much advance as any other class of men? Some two or three years ago the ignorance of miners, and their employers too, was a favorite theme with some of the public scribblers. You may perhaps recollect, or if not your columns still show it, that I told you then, and under the signature of "A Mine Captain" told the world, that the mining classes were more highly educated than these writers had any idea of, and, although my poor self and my paper received a severe castigation the following week in one of your slashing articles, the result of the recent examination of the classes of the Miner's Association proves the truth of my assertion, and that I was correct in my estimate of the position to be assumed by the mining community. No one, I presume, will have the hardihood to say this result could be achieved by one short three months' training, if they had no previous education. Whoever would endeavour to establish this must at the same time admit that their natural powers of mind are so great above others as to enable them to achieve in one short three months as much as would require any other class to attain in about twice so many years. Therefore, the detractors of the mining classes have to choose between the horns of this dilemma. But let us return from this digression to the mortality amongst miners and its causes—bad ventilation, dust and smoke, climbing to surface, hard work, and insufficient nutritious food. The first great evil—bad ventilation—much has been done of late to remedy, by carrying levels of larger area than formerly, and this, where the rock is of sufficient strength to stand without requiring timber supports, may be carried to a still greater extent, but where timber is required much cannot be done in this way. The improvements in air-machines, the daily increasing knowledge with regard to these matters, the almost general recognition of the principle that "the resistance of air increases with the square of the velocity," and the consequent rapid increase in the area of all air-pipes and courses will show that something is being done for the miner. Surprise has been expressed in some quarters that metallic mines should, as a general rule, be left to natural ventilation; we would be glad to hear what other course could be adopted that would be more effective. It must be remembered that in metallic mines, instead of these being but two shafts, and these very near each other, whence the workings are carried, as in some collieries, to the distance of three miles, the shafts are generally more in number, and these in different parts of the mine, whence communications are effected, and the situations being generally in hilly ground, from one shaft being sometimes much higher up the hill than another, atmospheric pressure alone will cause a powerful circulation. In some few cases where the ramifications are numerous, and the temperature of the earth high, artificial means may be resorted to with advantage, but it must be remembered there are difficulties in the application not present in collieries, to overcome which, whatever enquiry may be instituted, every arrangement will have to be left, as now, in the hands of the miners and their engineers. The most effective artificial ventilator—the furnace—will hardly be found applicable in the mines of Cornwall and Jersey, where the cost of the fuel would be found (for a 10-foot furnace) an important item.

We come to the next question—dust, arising from boring, working, and hammering the rock. No doubt this is one of the most fertile sources of disease, for when the body is in a high state of perspiration, the lungs put to do extra duty, every nerve quivering, and the whole system panting from the most violent exertions, much of the dust produced must enter the lungs, where these crude and angular pieces of rock cause more destruction, and lay the foundation for more pulmonary disease, than anything else. I do not see what can remedy this save machinery for boring, by which the men would have easier work, and be enabled to keep at a greater distance from the source of annoyance, but how to apply this machinery, and what kind of machinery would answer the desired end, are questions not yet solved.

With regard to smoke, if a smokeless blasting-powder could be invented it would become a great boon.

Climbing long ladders to surface from such great depths is no doubt destructive of health and strength, but the remedy applied to the collieries appears too fruitful in fatal accidents to commend itself here, where the care of human life is always a paramount consideration. The man-engine as now adopted in some of the largest mines in these counties is better, and must extend to wherever practicable.

Insufficient nutritive food arises from a low scale of wages. But how can this be remedied? When machinery is invented to do most of the work much faster than at present that of itself will raise the scale of wages, but without this, and with the present rapid rate at which all the necessities of life are rising in price, nothing can help the miner but a corresponding rise in the price of metals, which must eventually occur, but whether enough to much improve his present position will depend on a variety of causes beyond the control of a Government commission of enquiry or inspection. A general increase of wages throughout would be the most effective means of improving the miners health and well-being; but while there are, as at present, more miners than the mines can employ, and while

the prices of metals are so low as not to cover the cost of production, it would be vain to hope for or expect it.

What can a Government inspection effect in removing any of these ills now militating against the miner? Is not the condition of all our mines made public to all the world? Have not the present mining *employés* sufficient skill to cope with the difficulties, and to remedy the evils around them? If not, what class of men do you recommend being employed on this commission of enquiry or inspection? Might not the same money be more usefully employed in extending the usefulness of the Miners' Association, which has already shown that the mining classes possess more information than some people gave them credit for, and is now progressing in the proper course for diffusing that information among all ranks of the mining community.—*Lostwithiel.*

Wm. TREGAY.

#### THE GEOLOGICAL FORMATION OF THE EARTH.

SIR.—It is gratifying to old Practicals, when looking through your Journal, to observe remarks such as those made by your correspondent, G. J. Gunther, on July 27 last, and to see that he has caught a glimpse of light, and given common-sense views on such interesting subjects; it is like the dawn of day. I do not now purpose referring to these able remarks in detail, but will revert to them occasionally in my observations on this all-interesting subject. I may observe that with practical men the science of Geology is truly developed; the subject is so interesting and amusing, so expanding to their minds, that their first pursuits in the study of Nature's laws ultimately become to them a source of gain, which they follow up vigorously, from a desire to benefit themselves and mankind. The man studying geology and mineralogy practically acquires a general knowledge of almost every subject, and is in a position to meet men of any country, and can entertain them in conversation with a degree of pleasure and intelligence. It matters not as to his education; if self-taught, his words are sufficiently intelligible, and he generally states facts; whereas the classical scholar, with his high-flown language, is often difficult to be understood, and his statements generally not attested facts on which you could rear a mighty structure. When commencing this study of geology, &c., one must bear in mind that it is the great source of the rise and progress of man that he is about to deal with, and from which England now stands so prominent to the surrounding nations of the earth. In the mineral resources of England lies its strength; it is, in fact, the bone and sinew of the country,—the civiliser of the world. When the hardy sons of Britain first turned miners we need not doubt they were a rude, uncled race, subsisting almost on the bounties of Nature. At whatever period this may have been, it caused them to become thinking men; to them colleges were unknown. Still these men had that extraordinary book of Nature to guide them, from which they gathered science, and learned how to battle with their Mother Earth; to discover her weak points, through which they penetrated her crust, and extracted her long-concealed treasures with profit. To do this they had daily to study Nature, and combat with the hardest features of the Earth, in which they laboured perseveringly until they raised England to its present proud position of glory and honour. They sowed on her land the seeds of art and freedom, which she is now sowing broadcast throughout the world. The miners were the first to introduce the arts; their daily occupation led them to become thinking men. It taught them where and how to attack with success, to penetrate the dark abyss of Nature; no easy task in those early days, when the Earth, like mothers when their offspring were in danger, would apparently turn savagely on the persevering miners, just when her hidden treasure was in their grasp, and either deluge them with water, or destroy them by the fall of massive rocks or by the discharge of inflammable and other gases and after choke-damp. These miners had not only to learn how to attack in the softest places, but had also to ascertain her leading veins, cross-heads, and cleavages, so as to prosecute their work in the right direction with the best advantage; when suddenly (just as they supposed they had discovered the natural law of the rock) they are met by a change of rock, cross-head, or cleavage, and have again to consider the best course to meet and conquer this sudden change—a difficulty not always accompanied by the same man, and when overcome a new change as suddenly takes place, with which the miner has to battle with all the resources at his command but he has succeeded. In this manner the miners are met by Nature's rocks in hundreds of varied shapes and forms, all of which they overcome by untiring skill and perseverance. After doing battle with rocks of every grade and variety for 20 years, the miner is privileged to become what is termed a "tributary," or the man that searches for the Earth's hidden treasure, and getting only a certain portion for his labour. Here again, he enters a new field, where he has not only to battle with adamantine rocks and all the wrathful elements of Nature, but has also to watch its every twist and turn, gas and water-motions of courses,—trying to discover some trace or guide to where she has concealed her treasure. Her freaks are numberless, all of which will never be detected, and hitherto a few only are known,—such as have been discovered by the practical miner.

Our ancients commenced mining. They persevered and brought the ore to the surface, and evidently had to smelt it; as a proof, look at the heaps of slag or scoria on or near the mines. They also manufactured large portions of their mineral produce; and from this thinking race sprung all our artificers. These men when in the depths of the Earth had not only to watch her laws, but had to contend with and overcome Nature, and shield themselves from her vengeance. On the surface they had to invent machinery for working the mine, dressing, smelting, and manufacturing afterwards; and well have this self-taught race—the sons of freedom—carried it out. It is to them Old England owes her wealth and glory; these were the men who carved their way in the dark ages, when neither king, queen, or lord aided them. There were no endowed schools then, yet they never retrograded. The British miner is the miner still; he sank through the iron-bound shores and mined below the ocean; he is now sought after in every clime, where he will soon sow the seeds of freedom by developing Nature's produce.

It may be said other countries mined as early as the Britons. It is true, their works show it, but they did not mine with that energetic spirit the Britons did; they never broke the bonds of serfdom, they retrograded to all but extinction. It is said the Germans, Spanish, French, and Belgians mined, and that the Germans are well trained in Government schools. Have they progressed with it? I say no. A casual German manager may be found abroad, but there is not one managing a mine in England; whereas many English managers are to be found in Germany, and, in fact, in every part of the world. And I do contend that the English miner first sowed the seeds of freedom, which England is now propagating throughout the globe, and they have learnt more of Nature's laws than any other class of miners; still they receive no protection. The aristocracy, the farmer, and even the tenant-farmer, often cast a frowning look on this hardy, self-taught race. To the aristocracy I would say, beware how you exterminate the British miner; they are, as I said before, the sinews (I may say the back-bone) of Old England; and many of you, rather than mar your pleasure or delicate taste, would crack England's back-bone in preference to giving up a few fish or game, that never add a shilling to the revenue. To the farmer I say, he has ever lived on the brains of the hard-working miner; he is only the offspring, and was evidently compelled by the miner to become what he is. The farmer is compelled to keep pace with the miner and raise their food, for which he is paid an exorbitant price, and such as would never have been obtained but for the miner's perseverance. Let them take a glance at surrounding nations, where mining has retrograded, and they will there find the farmers scarcely emerged from serfdom, and entertain no plenaria guests. Again, if the aristocracy care not for the miners, then let them ascertain from the Chancellor of the Exchequer who supports the revenue. They will find they must not destroy the British miner, and retain their patrician pleasures in fish and game; neither must he be sacrificed to the agriculturalist. An agricultural country without mineral resources is not worth owning: their surplus produce would not provide them clothing and house utensils, and the farmers of such countries have the appearance of hermits rather than civilised men. Then why obstruct the miner's progress. I say—"Live and let live." Let our representatives legislate freely for the advancement of the mining interest, and develop the mineral resources of the country, from which the greatest revenue is raised. They should waste less time in discussing such frivolous questions as the Game and Fisheries Acts, and enter vigorously on the more important questions. It is time they should understand what was the mainstay of the nation, or their constituents should remind them, and return only those having a knowledge of what is really required by the country.

I have shown the rise and progress of the practical miner, who, I believe, are the only existing men with a knowledge of the bare outlines of the earth's formation, and its indicating guides to mineral deposits, notwithstanding all the works that have been written and printed by well-educated men of every age of this subject. These works, I believe, tend only to baffle and confound the working Practical, who, after reading Professor this or that's work of an evening, criticises his memory, and finds nothing to substantiate what he has read. He goes to his work the following day, determined to watch carefully; and with these remarks for his guide he continues working for months together, without a corroborative testimony bearing out the professor's statements, whilst he is hourly proving the correctness of his own views, as gathered from the book of Nature. He observes that what occurred once occurs again; such as one lode taking a certain direction is productive in ore, whilst other lodes near, and in the same stratification (with only a few degrees of difference in their bearing), are ever unproductive. Then he observes a dropper fall into the lode, and it becomes productive; a cross-course leaves a lode, and makes it productive; a second, with a few degrees variation, does not shift the lode, neither does it cause the lode to become productive. He observes what is termed good gossan on a lode, and he makes sure of finding good ore under; when he finds the lode more prolific in certain substances, he is sure it will shortly change to a more valuable mineral. He also watches the acids that ooze from the lode and surrounding rocks, if metallic; if not, he has not much to cheer him. He also wishes and watches for its proximity to all granitic and elvanic rocks that may thwart or intersect his lode, well knowing that much depends on such intersection, and how it meets the lode. He also knows that at the junction of many lodes in a mineral-bearing rock it is all but certain that some of them will prove productive about the intersections, and one or two of these lodes generally carry the bulk of the ore. He knows from the appearance of lodes in mines he is accustomed to if in the shaft, end, or whatever it may be, the lode is likely to change for the better. Watchful men know even by cutting water in different levels when they are coming near a shoot of ore, and which way it is dipping; hence it is that one man gets more money on tribute than another. It is better to take a poor looking pitch, with plenty of ground in it, in the line of a good shoot of ore, than to take a good looking pitch out of the line of ore, unless something is seen that will intersect the lode, neither does it cause the lode to become productive; if lodes make bunches of ore in these places, they are not often extensive. Now, a well-educated man may write books until the advent of doomsday, or make experiments for an equally long period, without discovering what the practical man knows. All his study and writing amount to nothing, further than to confuse the young student, and set him at variance with the man of practice. Theoretical writers are continually clasping and creating confusion, like the tongue of Bala, each asserting his own views as to how and which rocks were first formed. It is of little importance to the miner, smelter, or consumer as to these formations, or what they were before they became rock. All they require to know is what layers of the earth are mineral-bearing, and what are not, and the best and surest

guides to find it.

The platonists, or fire worshippers, appear to be the mania of the day. These theorists endeavour to make us believe that every mountain is but the remains of what was once volcanic fire. What can be more absurd? What rocks have we in England presenting a single indication of their having ever been volcanic? Is there a thinking Practical in all the country so narrow-minded as to believe that a single hill was ever a melted mass? I think not. Were it so, the inverted cone or crater would be found in every mountain. Hundreds of these hills have been driven through, and nothing volcanic found in them. In Cornwall levels are driven almost from sea to sea, and nothing of the kind is found. Carn Brea Hill is driven through, and no Cornish miner believes, from anything he can see at the depth of that level, that anything of a volcanic nature ever took place there. The whole of these rocks are crystalline; one portion is hard to melt, whilst the other melts freely, which proves, as clear as the sun at noon-day, that never was heat sufficient to melt the free portion, or it could not be there now. Every substance known to man is to be found in rocks (many of them inflammable); then, I

ask, how were they not consumed during the reign of fire? The platonists may say they have grown since; if so, they are ever growing; and never was there sufficient heat in the earth's crust to melt any portion of them. Sulphur if subjected to heat would burn of itself and evaporate. I have known many men (after reading theoretical works) go into a mine where chance has thrown in their way a cinder-like stone, and they at once catch the infection proposed by the theorist, and pronounce it a volcanic formation.—*Wiveliscombe, Aug. 20.*

NICHOLAS ENNOR.

[To be continued in next week's *Mining Journal*.]

#### THE CORNISH SYSTEM OF WORKING MINES.

SIR.—The remarks of Mr. Evan Hopkins, in last week's Journal, on the system of mining adopted in Cornwall, are unquestionably severe. That there is some truth in what he has written will not be denied in this letter; but how to supply a remedy suitable to general application is a question of great importance, and I believe of difficult solution. It is easier in the absence of a practical acquaintance with the peculiar requirements of a system to condemn it than to substitute another and a better one. Two or three questions naturally suggest themselves in consideration of this subject—Are the mines of Cornwall analogous in all respects to the iron and coal mines of the North of England and Wales; are the deposits, whether of ores or of coals, characterised by the same general features in all cases alike; do the metallic veins of Cornwall, yielding their respective products, whether of copper, lead, or tin, continue with unvarying regularity in depth and extent conformably to primary indications? Is it not the case in a variety of instances that lodes suddenly change their underlie, from some cause unknown and unsuspected, at the shallower depths; and still more frequently are they not displaced by cross-courses, and removed to considerable distances from their original position and bearing, showing clearly that until some reasonable depth is attained, and the whole of the agencies and influences by which lodes are affected are correctly ascertained, it is injurious and unsafe in Cornish mining to incur the expense of sinking a leading shaft, corresponding to those used in the iron and coal mines? And even when this is accomplished, and the various improvements adopted—recommended by Mr. Hopkins as necessary—to raise Cornish mining to a level with other districts, will he then undertake to affirm that the practical working of that system will be productive of similar results in both cases? If so, I will thank him, in my individual capacity as a Cornish mine agent, for any information on this subject his great experience and judgment qualify him to impart; and, at the same time, I hope the mine agents of this county will enter into the discussion of this question with becoming interest, and exhibit that candour and intelligence which shall give a practical refutation to the charge contained in Mr. Hopkins's letter,—that the mine agents of Cornwall are too strongly prepossessed in favour of their own system to admit of any change in it, however advantageous and beneficial it may be found to operate in other districts.

ROBERT KNAPP.

#### THE CORNISH SYSTEM OF WORKING MINES.

##### MR. EVAN HOPKINS ON THE WICKLOW MINES.

SIR.—This able and diligent correspondent of the Journal is giving his old friend, Nicholas Ennor, an excellent piece of advice, by recommending him to inspect the sulphur mines of Wicklow before he makes another visit to Spain. If Mr. Ennor will act upon this friendly advice, he will find Cornish managers and Cornish agents in every mine of the county Wicklow, and "one and all" ready and willing to give him a hearty welcome as an honest old miner, though without that polish which so often covers a substance rotten at the core. He will then find, what his friend, Mr. Hopkins, does not appear yet to know, that the Wicklow sulphur is not so much "enclosed"—adopting Mr. Hopkins's nice distinction—as actually "embedded" in the clay-slate of the lower Silurian system, as of contemporaneous formation.

I have read with great interest, and, I hope, with benefit to myself, Mr. Hopkins's several publications, and many of his able letters in the *Mining Journal*, on geological facts and theories, and have thereby acquired a high regard for the author's comprehensive views in geology. But this great comprehensiveness, I fear, unites him for a miner. Geologists of Mr. Hopkins's class are about as fit to follow the intricacies and caprices of lodes as a Brunel or a Stephenson would have been qualified to follow the calling of tallow manufacturing, although their talents as engineers are of world-wide fame. I am led to these remarks by Mr. Hopkins's opinion, expressed in his "Cornish System of Working Mines," and published in last week's Journal, wherein he says,—"If deep poor mines are to be further prosecuted, I would recommend the shareholders and lords of such mines to place them in charge of the North countrymen, to work them according to their method. The pumping machinery and the dressing may be left in charge of Cornishmen. If this plan be adopted, many old mines now wrought at ruinous losses may be rendered highly remunerative, and permanently beneficial to the country." Will your correspondent name any place in the world, and he has seen a great part of it, where such poor and small intricate lodes as are in Cornwall are worked to greater advantage than in that county, unless managed by Cornishmen? Again, he says, "Cornishmen, unfortunately, take their own system as a standard of perfection, and are prejudiced to everything but what is adopted in their own country." I wonder that Cornish lords and shareholders are so blind to their own interest as not to have discovered this fact are they were told of it by Mr. Hopkins. But, perhaps, he will tell us where his opinions or his advice on Cornish mines have been successful, and then your readers will arrive at a correct appreciation of Mr. Hopkins's system of management. It would be easy for him to manage a few mines in Cornwall as it is for him to manage his first experimental mine in this "green Isle," by directing the underground work per telegrams. I cannot help saying that his report on the appearance and progress of that mine, and published in the *Irish Times* of July 2, does not fill me with the same degree of respect for Mr. Hopkins's qualifications for a mining captain as I have for his general knowledge of geology. His comparison of the Cornish system of working mines with the North countrymen's method of working iron ore, ironstone, and collieries, is singularly ill-judged from a gentleman of so much experience in mining as Mr. Hopkins ought to have picked up in his geological rambles through the world. I should hope there is no mine agent, either in or out of Cornwall, who cannot see the necessary difference in the system required for working iron ore and ironstone, quarries, and collieries, the extent of which is calculated by the acre, and the method necessary to be pursued in the working of small lodes, the ore-bearing part of which is mostly measured by inches, and in the richest mines only by feet. His criticism on the recklessness with which he advises Cornishmen sacrifice the health of the labouring miners needs scarcely to be commented upon, as few people interested in mining are ignorant of the credit due to Cornwall and Cornish enterprise for the introduction of the

mirable stone quarry on the property, which is but two miles from the Ministry Railway Station. In conclusion, I can with confidence assert that the Central Snailbeach shaft will with judicious working prove second to none in the county. EDW. DAVIES.  
The Brestell Colliery, near Shrewsbury, Aug. 20.

## THE BEARING OF LEAD LODES.

SIR.—In the Journal of last week there are two reports on the Carmarthen United Mine; one from Mr. Evan Hopkins, and the other from Mr. Hobt. Sanders. Mr. Hopkins states in his report,—"That the north-west bend in the lode going north is favourable for the production of ore; it is the most productive bearing." And, again, he states,—"Had the underlie been towards the valley, instead of into the hill, the lode south of the shaft would have been more productive." Also, speaking of the caunter lode, he says,—"The underlie is unfavourable for the aggregation of mineral going south into the hill." And goes on to say,—"If the caunter have a good footwall and keeps the same bearing, I expect masses of ore will be found in 10 or 15 fms." My object is not to criticise Mr. Hopkins's report, but to enquire of him the bearing and underlie of the most productive lead lodes in North and South Wales? I find from observation that the most productive lead lodes in Devon and Cornwall are from 5° to 15° west of south and east of north; and should they bear 10° to the east of south they are unproductive, and generally become mixed with the rock they pass through, or, perhaps, a dead flock, without any mixture of quartz or fluor-spar, or anything congenial to the formation of lead. I think in Devon and Cornwall this will be found a rule without an exception. And I should feel much obliged to Mr. Hopkins if he will inform me the bearing of the most productive lead mines in Wales.—*Redruth, Aug. 20.* HY. JAMES.

## AURIFEROUS STEEL.

SIR.—In last week's Journal I find a revival of the proposition for improving the quality of iron and steel by employing a small quantity of gold as an alloy; and, from the prominence given to the subject, it would appear that extraordinary results are anticipated from the development of the invention. Yet, passing over the apparent anomaly mentioned, that adding gold by the pound produces no beneficial effect, whilst adding it by the dwt. is to be highly beneficial, I cannot understand how such an infinitesimal proportion of any metal in the steel could produce any palpable effect, for I find that the proportions in every 100 parts are something like these:—Iron, 99.999983; gold, or platinum, 0.000067. Now, I would ask Mr. Longmaid whether he is prepared to state, as a chemist and metallurgist, that such an alloy can be artificially produced? In my opinion, it would be as difficult to obtain a perfect alloy in these proportions as it would to obtain a perfect mixture of a single drop of olive oil and a hogsherd of distilled water. In each case the greatest consolation of the manipulator (after having lost sight of the foreign substance) would be to know that it had been added to the iron or water, as the case might be, but to ensure anything approaching uniformity in the mass would, in my opinion, be impossible.

Mr. Longmaid's mode of obtaining an intimate connection between the two metals is, doubtless, as good as any that could be suggested, but even that in practice will be found ineffectual—he could not produce a single ton of uniform auriferous quality. But this is not all. Even assuming that the best known iron and steel contains gold in the proportions fixed upon by Mr. Longmaid, can it be believed that it is the gold which affects the quality of the steel? or rather will it not be found that its existence in the finished metal is attributable to the existence of inappreciable quantities of the precious metal in the ore, and that the steel would be just as good if no gold were there?—*Tipton, Aug. 22.* J. WEBB.

## PEAT AS AN IRON-MAKING FUEL.

SIR.—The question of using peat as a fuel for the manufacture of iron is one of such vital importance in Ireland, that it is really marvellous that so much apathy should exist respecting it, more especially as several really promising inventions have been brought before the public to accomplish the desired object. Few, perhaps, are more novel than that of Mr. W. H. Buckland, of South Wales, which was referred to in the *Mining Journal* some few months since. I understand that negotiations are now pending with several influential gentlemen in Ireland; and feeling confident that peat, if properly prepared, could be advantageously employed for the manufacture of iron, I should be glad to learn the price per ton at which it is proposed to supply it, and whether a few tons could now be had for experimenting with.

While writing, I may mention my reason for concluding that peat could be advantageously used for the purpose mentioned. I find that every attempt to treat coke irons to make them equal to charcoal irons has failed, and that many processes for making steel have succeeded with charcoal iron, but proved useless with coke iron. But it seems to me that peat charcoal and wood charcoal are so nearly similar, that if we could have peat iron at a moderate price I cannot see why we should not at least be rendered independent of foreign countries for our supply of steel-iron, and the development of the peat-iron manufacture would likewise have the effect of greatly improving the condition of the labouring population of Ireland.—*Cork, Aug. 22.* J. B.

TREATMENT OF POOR COPPER ORES.—The subject of treating poor copper ores is attracting quite as much attention in South Australia as in this country, and it appears that the colonists are not altogether inclined to permit an Englishman to have the honour of introducing the process by which ores now lying valueless shall be brought into a marketable form. Mr. R. V. Rodda, of the Burra, Burra Mines, has discovered a process promising results no less important than those contemplated by Mr. Henderson. Mr. Rodda does not claim to deal with ores so low as 1½ per cent., which is Mr. Henderson's minimum, but 3 per cent. ores are certainly not below his treatment; while it possesses the advantage over Mr. Henderson's method that it is applicable to high-class ores also, and it is likely to effect a considerable saving in their transmutation into copper. Mr. F. Simlett (the inventor's agent), in a letter addressed to the *South Australian Register*, says—"The use of the Yatala Smelting Works has been obtained, in order that Mr. R. V. Rodda's process may be tested on a satisfactory scale, and the requisite works are now in progress there. In a few weeks' time I hope you will be able to judge for yourself that it is not necessary to go from home to find a valuable illustration of the fact, that the inventions of one man are often very harmoniously timed with the discoveries of another." With reference to the extension of smelting operations in the colony, it is affirmed by a competent authority upon fire-clay, that the brick material at Wallaroo is equal in quality to any found in England or elsewhere.

STEAM ON COMMON ROADS.—The applicability of steam to locomotion on common roads has been long and universally admitted, but until a recent parliamentary enactment extended some protection to common road locomotives it was extremely difficult to succeed, even where no direct opposition was offered. Henceforth there will be nothing to prevent the profitable development of the traction-engine system, and the benefit derivable by the general public will be quite as great as by the shareholders in the company. The invention of the late Mr. James Boydell is well known to our readers, and the fact that his engines have given the greatest satisfaction in the colonies, in Russia, and in all other places where they have been tried, is likewise familiar to them; they will, consequently, be glad to learn that, with a view to securing the widow & family of the inventor, some return for his indefatigable labours, and the large amount of expense which he incurred in perfecting his discovery, a company has been formed with a capital of 50,000*l.*, in 10*s.* shares, and upon the limited liability principle, for bringing Boydell's Endless Railway Traction Engine into general use. The great advantage which Boydell's machine possesses over all its rivals arises from the fact of its carrying its own railway, and a railway, too, in the ordinary acceptance of the word. The consequence is that whilst other traction-engines are only efficient upon an ordinary road, so good that they could be travelled by bullock-wagons, Boydell's engine is equally useful in unsettled country, where no roads exist. To a great extent it will give mines situated in districts unapproachable by other means the facilities of those situated near the shipping port, and no doubt its use would add materially to the profits derivable from the working of mines in such localities as the interior of Spain or the northern districts of South Australia. For every other purpose the engine would be quite as efficient for the transport of mineral produce; and as soon as sufficient exertions have been used to secure the adoption of the machine, there can be no doubt that the profit to the shareholders will be enormous.

GENERATING HEAT IN BOILERS AND FURNACES.—An invention has recently been patented by the Hon. W. E. Fitzmaurice, of Hyde-park Gate, which consists, firstly, in burning carbonaceous matter, or fuel, in oxygen gas, or in oxygen gas diluted with atmospheric air, and in the direct application of the heat thereby generated to boilers or furnaces, or in the application of the gaseous products of this burning of carbonaceous matter as fuel. Secondly, it consists in mixing water or steam with oxygen gas, or with atmospheric air, or with these combined, and in passing such mixture through heated or ignited carbonaceous matter, and applying the gaseous products obtained therefrom as fuel to boilers or furnaces by any convenient mode of application.

TENBRINCK'S FURNACES.—The specification of this patent, just filed as a communication to Mr. Henry, the patent agent, Fleet-street, relates to furnaces constructed of metal, and consists chiefly in combining in the construction thereof sloping or self-supplying fire-bars, a hopper plate without perforations extending to the fire-bars, a valve for admitting air just over the layer of fuel lying on this hopper plate, and an inclined water space, so arranged and placed that the flames and hot gases are forced to pass round one end of it, and are brought into contact with the fresh fuel issuing from the hopper, which they thus subject to a commencement of distillation.

THAMES TUNNEL COMPANY.—Receipts for the week ending August 17, 53*l.* 11*s.* 8*d.*; number of passengers, 12,860.

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending August 18 was 11,890*l.* 10*s.* 9*d.*

HOLLOWAY'S OINTMENT AND PILLS—HIDDEN AILMENTS.—How many persons suffer from disease, for which, through bashfulness, no relief is sought till their strength of constitution is sapped. The headache, deranged digestion, and dull pain in the back and joints, attendant on these maladies, may be safely and permanently cured by rubbing in Holloway's ointment, and regulating the system with his pills. All diseases affecting the lowest bowels, which are so troublesome and so weakening, may thus be cured without consultation and without vexing explanations. The swellings soon subside, and ease succeeds. Holloway's universally esteemed ointment and pills are equally suitable to both sexes, all ages, and in any climate. Full instructions for their use accompany each packet of these medicaments.

## Meetings of Mining Companies.

## NORTH DOWNS MINING COMPANY.

A general meeting of shareholders was held at the account-house of the mine, on Thursday, Aug. 15.—Mr. RICHARD HALLETT in the chair. Upwards of forty shareholders were present, including about a dozen from the neighbourhood of Liskeard.

Mr. W. J. DUNSDORF (the secretary) having read the notice convening the meeting, the accounts and minutes of the last meeting were submitted for confirmation, and signed by the Chairman. He next read the statement of accounts, as follows:

Balance from last account .....	£ 136 14 3
Copper ore sold, May 30, 240 <i>t.</i> 8 <i>q.</i> .....	1831 2 5
Ditto, July 27, 277 <i>t.</i> 19 <i>q.</i> 2 <i>q.</i> .....	2190 3 9
Old materials sold .....	17 12 0
Labour cost, March .....	£ 498 0 8
Ditto, April .....	431 4 0
Ditto, May .....	506 9 7
Ditto, June .....	468 18 9
Merchants' bills, March .....	£ 1904 13 0
Ditto, April .....	153 5 4
Ditto, May .....	147 3 9
Ditto, June .....	182 18 0
Royalty on ores sold .....	276 17 0
Interest and discount .....	760 4 1
Leaving credit balance .....	201 1 3
	15 12 6
	2881 10 10

Balance leaving credit balance .....

Leaving credit balance .....

The following report of the mine was then read by Mr. F. PAXON, the manager:

Aug. 15.—Since the last meeting of the adventurers we have completed King's engine-shaft to the 60 fm. level, done all necessary work in connection therewith, and are now pushing the shaft down to the 70 by a full pace of men, at 25*f.* per fathom; the lode in this shaft is 2 feet wide, producing stones of ore, and it is at present, and has been, in the cross-course for some considerable time past, which accounts for its non-productiveness. The 60 is driven east of King's shaft 3 fathoms; the lode is large, and presenting a better appearance than it did at the same point in the level above. If we may calculate from the dip of the ore from the 50, we have still some distance to drive to reach it, but judging, however, from the appearances of the ground to-day, we are of opinion that we shall shortly have a decided change for the better. The 60 is extended also west of the shaft about 3 fathoms; this end is presenting such an appearance as induces us to expect a course of ore daily. The 50 is driven west of shaft 34 fms.; this end has been, and is still, opening up some good tribute ground—present end worth about 20*f.* per fm. We may observe that we have no level over this end. The 40 is extended east of the shaft about 30 fathoms: this end is producing good stones of ore; and, judging from the ground we have driven through in this level, we are of opinion that we are skimming over a good lode of ore, as a pool of which we may mention that we have a good lode of ore in the rise going up from the 50, which is worth fully 25*f.* per fathom. We attempted to sink winzes below the 50, both east and west of the shaft, but were prevented from doing so in consequence of the water, the 60 ends not being extended far enough to drain the ground. These winzes were being sunk in good courses of ore, but as we are not at present raising ore from them we deem it right not to include their value in this report. The 50 is driven east of the shaft 36 fathoms through a good course of ore; the last 20 fathoms worth on an average not less than 60*f.* per fathom, present end worth 70*f.* per fm. We have communicated a winze from the 40 to the 50, which has passed through a good course of ore, and which has well ventilated this part of the mine. We have also sunk a winze in advance of the end through a good lode of ore. Since our last meeting we have driven over a lode of ore east of Bennett's shaft, in the 40, about 10 fathoms, worth 100*f.* per fathom. This may be regarded as a very important feature, as the lode has come in under the slide, and at a distance from the western end of upwards of 100 fathoms. Our object is now to push on with all speed the 50, so as to enable us to sink Bennett's shaft, and seeing this ore is making back through it, we may reasonably expect that it will fully pay for sinking. We see no reason, as we before mentioned, why the coming in of the ore under the slide in the eastern part of the mine will not have the same effect as in the western part, and if so I scarcely see away the results, the samplings being the best proof. We are putting up a rise in the back of the 40 at this point to communicate with a winze sunk below the 30, which will thoroughly ventilate this part of the mine, and also open up good tribute ground. We are cross-cutting in the 30 to intersect North Treskerby and other lodes, which are now so very productive to the east of us. These lodes run through the entire length of our self, all in whole ground, and as our cross-cut is in a beautiful channel of killas we attach great importance to this point of operations. In conclusion, we would remark that our stops and pitches are looking extremely well, one stop being worth 100*f.* per fathom. You will perceive from the statement of accounts, and the steady increase of our samplings, that our position is greatly changed, and although we have no doubt of our next sampling again exceeding any former one, yet we do not hesitate to say that we have been, and are at the present time, discovering twice as much ore as we are taking away.

Mr. DUNSDORF having submitted the accounts and report to the meeting, moved that they should be adopted, and entered in the cost-book.—Mr. EDWIN COOKE (of Redruth) having seconded the resolution, it was carried unanimously.

The CHAIRMAN said that it was his pleasure to propose a dividend of 2*s.* 6*d.* per share, amounting to 750*l.*, leaving a credit balance of 544*l.* 1*s.* 7*d.* to be carried to next account. The time had been when he and his fellow-committeemen had had to pledge their own credit to procure the funds to meet the cost-sheet, and they had done so willingly, for they had the most complete confidence in the mine, and in the management. All that was now past, and henceforth they would have no occasion to go to their bankers, for there was not a shadow of doubt that at their next meeting their accounts would show as good, probably a much better, balance. They could calculate at least upon a like dividend of 2*s.* 6*d.* per share, with a surplus, of 70*l.* to add to their present balance.

If, indeed, between this and the next meeting the standard should rise, they would be able to add still more largely to their balance, if they would be then content with only dividing 2*s.* 6*d.* per share.

Mr. DUNSDORF having referred to the cost and probable returns between this and the next meeting, showed that, with an improved standard, the next dividend might be 5*s.* per share, still leaving an increased balance.

The CHAIRMAN said it was proposed that the dividend should be payable on Sept. 1, as the ore bills came in on the 28th.

Mr. I. C. ISAAC (of Liskeard) said he felt quite satisfied with the statement of accounts and the proposed dividend. The report was also most satisfactory, and he felt they were quite justified in making the dividend of 2*s.* 6*d.* per share; he, therefore, had great pleasure in seconding it.

The CHAIRMAN then put the resolution that a dividend of 2*s.* 6*d.* per share be declared, payable on September 1 next, which was unanimously agreed to.

Mr. RICHARD HAWKE (of Liskeard) proposed a vote of thanks to the Chairman, which was seconded by Mr. FRANCIS PAXON, and carried unanimously.

The CHAIRMAN having returned thanks,

Mr. I. C. ISAAC begged to be permitted, before they separated, to propose a resolution which, although often adjourned until after dinner, seemed to him to be really a matter of business. When they looked about them, and saw this prosperous mine, with an excellent plant and machinery, and every appliance to develop its resources, he would ask them—Who had caused it? The answer must be—the skill of the agents; and, therefore, he asked all the shareholders to join cordially in returning their best thanks to Mr. PAXON and the agents, by whose exertions and skill this property had been made so valuable.—Mr. GLUMS (of Liskeard), on behalf of himself and numerous friends about him who worked together, had great pleasure in seconding the resolution. Some said that Mr. PAXON was a lucky man; but they looked to results, and if these were satisfactory to him, he had great pleasure in seconding the resolution. Some said that Mr. PAXON was a lucky man; but they looked to results, and if these were satisfactory to him, he had great pleasure in seconding the resolution. Some said that Mr. PAXON was a lucky man; but they looked to results, and if these were satisfactory to him, he had great pleasure in seconding the resolution.

The resolution of a vote of thanks to Mr. PAXON and the agents having been put, was carried unanimously.

Mr. PAXON said he was particularly gratified in having a vote of thanks proposed and seconded by gentlemen who, with their friends, held such a large interest in the mine. He had to thank them not only for the compliment paid him by the present vote of thanks, but also for the confidence which they had reposed in him in times past. He hoped always to have the same confidence from them, which on his part he should always do his best to deserve. If they cut the shoot of ore they now had in the 50, their next level (the 60), North Downs would be one of the best copper mines in the western division of the county of Cornwall.

Mr. ISAAC said he had one more resolution to propose, and that was a vote of thanks to their secretary, Mr. DUNSDORF. Of his experience of London management and London offices, he could say that, of any with which he was acquainted, he knew of none equal to Mr. DUNSDORF's, or in which he had so much confidence. He was particularly struck with the clearness with which all the books and accounts were kept, which in his opinion was a point of the utmost importance. He felt the shareholders were greatly indebted to Mr. DUNSDORF.—Mr. R. HAWKE seconded the resolution, which was carried unanimously.

Mr. DUNSDORF, in returning thanks, said he had always endeavoured to deserve the confidence of the shareholders in mines in his office, and hoped he should continue to have the same confidence from the North Downs shareholders as was expressed by the resolution just passed. If he failed to do so, it would certainly not be from the want of any endeavour on his part. He had worked hard for this mine, and taken the burthen when its position and prospects were very different from what they were now. He had been in and out at times which in his position was necessarily the case, but he could truly say that he had always been in the right in North Downs. It was satisfactory to him that his exertions had not been without some result, and that he had the pleasure of meeting them there that day, on the declaration of their first dividend—the beginning, he hoped, of a long course of prosperity. He again returned them his sincere thanks.

The meeting then adjourned to dinner, where they were joined by several guests, including among others, Mr. THOMAS FIELD (of London), Mr. WM. PAGE (of London), and Mr. EDWARD COOKE.

## NORTH DOLCOATH MINING COMPANY.

An ordinary general meeting of shareholders was held at the company's offices, Adam's-court, Old Broad-street, on Wednesday.—Mr. W. C. VIVIAN in the chair.

The notice convening the meeting having been read, the minutes of the last were read and confirmed. The accounts showed—

Balance last audit .....	£ 228 15 7
Mine cost, Feb. to June ..	

under judicious and proper management, and with that view be seconded the amendment.—Mr. MILFORD said he would inform proprietors that he had received a letter from the mine, informing him that the mine had never looked so poor.

Mr. COPE said the only question appeared to be whether they should continue or discontinue making calls, or whether they should stop the mine, and sell the reserves of ore, plant, and machinery, by which they would probably realize 11, or 21, per share.

The CHAIRMAN, in answer to the remarks of Mr. Hoskin with respect to the number of men employed underground, said that it was hardly probable the committee or agent would have recommended an increased number of men, seeing that those already employed were not producing a profit.

Mr. HOSKIN said he had referred to the number of men employed underground as being small, when the amount of the labour cost was considered. He contended they were paying a great deal too much for the number of men employed.

A scrutiny of votes was then demanded, when there appeared—For the amendment, present, 67; proxies, 408=475. Against, present, 851; proxies, 110=961. Majority against the amendment, 486.

Mr. NICHOLLS objected to any shareholder voting who had not paid his calls.

The CHAIRMAN said the objection, he understood, could have no avail, for after deducting all shares in arrear of call, there remained a majority in favour of the resolution.

The resolution was, accordingly, declared carried, when some formal resolutions were passed.

A vote of thanks to the Chairman and committee was unanimously passed.

The CHAIRMAN, in acknowledgment, thanked the meeting for the vote, and assured the parties, whoever they might be, who bought the mine to re-work, that it would give him great satisfaction if they succeeded in bringing it to a successful issue.

The proceeding then terminated.

### WEST TOLVADDEN MINING COMPANY.

A meeting of shareholders was held at Ball's Union Hotel, Penzance, on the 16th inst. Mr. THOMAS WESTON, of Tean, Staffordshire, in the chair. That gentleman read the notices convening the meeting, and the minutes of the last general meeting, and of an adjourned meeting since; these minutes he proposed, and Mr. STONE seconded, should be confirmed—a motion which was carried unanimously. Mr. WESTON explained at great length the various transactions arising out of those minutes, which instructed the committee to investigate certain claims, arrange for the relinquishment of some shares, and generally to place the mine in a better position. Mr. Weston's explanations comprised a mass of correspondence, all showing the interest the committee (headed by Mr. Weston) had taken in unravelling some very complicated transactions. The results were, that the committee had accepted the relinquishment of Major-General Buller's shares, as also those of Capt. Rickford; that after maturely considering the dealings between Captain James Thomas and Mr. J. D. Brunton, they had decided on recommending the speedy dismissal of Capt. Thomas from the agency of West Tolvadden, and of his son (a formal resolution was now passed to dismiss Capt. James and Charles Thomas, their services to be dispensed with from the present time, but their salaries to be reckoned to the end of September); that proceedings for the forfeiture of shares had been successfully taken in the Stannaries Court; that the committee had decided on the course to be adopted in reference to a claim by Capt. J. Donkin, for acting as purser under Mr. J. D. Brunton, as also on the terms to be made with a shareholder who had been put into the Penzance County Court. Mr. Weston then stated that a balance-sheet had been prepared, showing not only the receipts and expenditure of the mine, but its assets and liabilities up to the present period, with the object of discharging debts now due to people, but demands made on the shareholders for debts of long standing, and of which they had been kept in complete ignorance; a friendly arrangement had been made with the Messrs. Harvey, of Hayle Foundry, who had taken bills of moderate date. Old bills, of whose existence the committee were unaware, had been sent in to the amount of 150/-—one at late as only yesterday—but all were now charged up; 770 shares had been absolutely forfeited in the Stannaries Court, 300 more had been relinquished, and one gentleman would most likely relinquish 300 more. This brought their shares down to about 3600, but all were now bona fide holders, and, he believed, would work and manage the mine in a business-like manner. Mr. Weston then read the following balance-sheet, with an occasional comment on some of the items:—

Amount of cost to June, 1861, per cost-book.....	£3628 8 2
Rent of mine to Mr. Le Grice, and to the Duchy.....	102 10 3
Law cost .....	40 13 0
Auditors' and committee's fees .....	51 0 0
Ribden Mine, for engine.....	250 0 0 = £4072 11 5
Original call .....	£1024 0 0
By subsequent calls.....	2342 16 6
Copper ore sold .....	81 13 8 = 3448 10 2
Leaving debit balance .....	£ 624 1 8

A statement of assets and liabilities showed a balance of 4541. 10s. 5d. against the dividends to June 30.

Mr. DINGLE went into an estimate of the work to be done during the next three months: 25 ft. of the sea wall was complete, its whole length being 68 ft. The engine-house was nearly finished, and there was timber on the mine to do the remaining work. The water was cut to the 20 fm. level. Capt. Charles Pascoe had only recently taken office, and the following was his report:—

Since the last meeting the engine has been erected, and, with the exception of a little boarding, the engine-house finished. The boiler-house is not complete, there being about 8 perches of masonry more to build, and the roof to put on, which has been delayed to build the stack. The stack is now 36 ft. high, having 4 ft. more to complete the contemplated height of stonework, on which there will be carried up 30 ft. of brickwork. The bricks are on the mine, and when the stonework is complete the remainder will progress faster. There has but little been done to the breakwater of late, as the masons are proceeding with the most important work first. The water is in the fork, and the engine-shaft is being sunk to the 30 with all possible dispatch. The eastern end, under the sea, will be discontinued, being already as near to the bed of the sea as we are allowed to go. The western ground is hard, therefore we do not think of driving on it until we reach the next level. The indications are of a very favourable character, and when the ory ground is reached in the next level there is every reason to conclude that the result will be highly satisfactory.

Mr. STONE moved, and Mr. PHILLIPS seconded, that a call of 3s. per share be made, payable on Sept. 6.—Capt. Pascoe was appointed agent, at 6s. per month.

### ENGLISH AND AUSTRALIAN COPPER COMPANY.

The half-yearly (extraordinary) meeting of proprietors was held at the London Tavern, on Thursday, Mr. R. A. ROUTH in the chair.

Mr. C. B. ROGERS (the secretary) having read the notice convening the meeting, The CHAIRMAN said, as the present was only the half-yearly meeting there was no printed report to submit to the proprietors, but with their permission he would submit a short statement, showing the prosperity of the company, and some few extracts from the last despatches received from Mr. Hamilton on the other side. He would then make some general observations upon the present position of the company, and conclude by proposing a dividend from the profit realised during the current half-year. When they met in February last their Chairman (Mr. Schneider) informed them that there was every prospect of the company progressing satisfactorily. He (Mr. Routh) was happy to say that notwithstanding several circumstances, to which he would afterwards allude, which had operated against the market price of copper, the anticipations of their Chairman had been realised. The quantity of ore received from the Burra Burra Mine from June 30, 1860, to May 25, 1861, had been no less than 14,659 tons; the quantity of ore smelted at the works during the same period had been 10,373 tons, against 6891 tons during the whole of the previous year. The quantity of copper made from June 30, 1860, to June 25, 1861, the date of the latest despatch received from Adelaide, had been no less than 3607 tons, against 1975 tons made in the previous year—that showed a clear excess of more than 1000 tons of copper made this year over that made during the preceding corresponding period. The quantity of ore shipped to this country to June 25 was 6010 tons, and the quantity of copper shipped to this country and India was 984 tons, against the total quantity shipped last year of 160 tons. Those figures, he thought, would speak for themselves. The average number of furnaces at work during the 46 weeks comprised in the period from June 1 to May 25, was 8 against 6 1/2 for the same period last year. The stock of copper on June 25 was 3789 tons, and the quantity of wood 4313 tons. That was a short analysis of the result of the working during the past year. He would now proceed to read one or two extracts from the last despatches, which would give an idea of what had been done on the other side. The first to which he would refer was with respect to the cartage. It appeared that up to June 15 their teams had done 14,407 tons; taking into consideration the loss in light loading down, and the fact that they had been short of drivers during the season, and that the season was a very wet one, it might be safely concluded that the horses and mules could under more favourable circumstances have done at least another 3000 tons. As regarded the new works at the port, he considered that a matter of the greatest importance, and one which would very materially affect the future position of the company. The directors had thought it advisable to erect some new furnaces at Adelaide, which, he was glad to say, were now in a very advanced state of progress. Indeed, they hoped to learn by the next mail that those furnaces were actually producing copper for the benefit of the company. Those works were not adopted without a great deal of consideration. It had been found there was a great quantity of ore at Burra Burra ready for smelting, but that there existed great difficulty in getting up sufficient coals to the works, which had induced the board to determine upon the erection of some furnaces at the port. Calculations had been made by Mr. Hamilton, who estimated that the saving which would be annually effected by the smelting of the ore which would otherwise have to be shipped to England would be between 8000t. and 9000t. Now, his (the Chairman's) estimate was not quite so high as that, but he thought it to be perfectly clear that, by the erection of these works at the port, there would be an annual saving of about 5000t.

Mr. GODDARD enquired what had been the cost of these new works?—The CHAIRMAN replied between 8000t. and 9000t., but he did not contemplate it would in any way affect the financial position of the company on this side, because it would be found that the advantages that would accrue from smelting the whole of their ore would be incalculable, for it would not only be the means of saving the freight, and other expensive matters on this side, but it would at the same time give them the command of the market, because with copper they were in a much more favourable position than if they only possessed the ore—in fact, he apprehended the works would pay for themselves in twelve months.

The Rev. Mr. DRUMMOND enquired if the meeting were to understand the whole of the ore would be smelted at the new works?—The CHAIRMAN said that the old works would, as usual, be kept in full efficient working, but the new furnaces at the port would smelt so much of the ore as would otherwise be sent to England in an unrefined state, and the new works would also smelt ores from other companies, so as to keep the new works in full operation. He had omitted to mention the fact that an immense saving would be effected by these new works, in obviating the expense of the carriage of coal from the port to the old works. There was a railway, but it had not been extended beyond 50 miles towards the works, and in course of years he thought there was no question it would be carried to the works. The coals were taken from Newcastle, delivered on the wharf, in the immediate neighbourhood of which were their new smelting-furnaces, so there could be no question that, of all others, was the spot for the smelting of their ores.

The Rev. Mr. DRUMMOND enquired if the directors thought there was any probability of the company obtaining ore from other companies?—The CHAIRMAN said that was a subject which was meeting the serious attention of the directors. They were exceedingly anxious not to jeopardise their present favourable financial position by the extension of their trade beyond the limits of their capital, considering it of far greater importance to maintain regular dividends than to enter into a trade which might have the effect of crippling them from want of capital. The next point to which he would refer was to Henderson's patent. Now, Mr. Henderson, it appeared, had discovered a means, by a wet process, of profitably reducing low class ores, which were found in very large quantities at the Burra Burra Mine. He (the Chairman) did not know whether there would exist any difficulty in reducing low sulphur ores, but he might inform the meeting that there would be some difficulty with respect to carbonate ores, for this company was the sole owners of the patent which possessed the right to reduce carbonate ores upon the principle which had yet been discovered of efficiently reducing them. No doubt the

shareholders were aware there were 10 furnaces in course of erection at Wallaroo, which were situated 100 miles up the country, but the English and Australian Company would be making copper at the port long before the works could be finished at Wallaroo. This company stood in the position of the highest credit, but the board wished success to any other company that might be formed. He would now refer to two circumstances which had militated against their company, and all other commercial enterprises during the past six months—they were circumstances over which no one could possibly have any control; the first was, they had a short harvest, which, by Government figures, occasioned a loss of 30,000,000t.—that amount was sent from this country for the purchase of foreign corn, which had had a very material effect upon our money market. The other was a circumstance which no one could have anticipated—they found that the republic of America, which had always been regarded as the model of the republican world, in arms, "brother against brother," which paralysed the whole trade of the country. He had for the moment referred to those circumstances—which seemed so far distant—because it might have been thought by some that they could not possibly have affected their company. The American question had very materially affected the metal market, more particularly copper, which had been subjected to the most violent fluctuations, the price having fallen far below all the calculations which any ordinary person could have made. Notwithstanding those depressing circumstances, the directors had acted so judiciously that they did not anticipate any sensible effect upon their financial position which would be experienced at the end of the year from that cause, which otherwise must have affected them most materially. During the whole of that period they had experienced no difficulty with regard to their monetary affairs, and he believed at the end of the year their balance-sheet would show their financial position to be in an exceedingly favourable condition. As an evidence of the growing prosperity of their company, he might advert to the fact, that for the first time, the directors of the Burra Burra Mining Company, in their report, thus referred to them—"Large deliveries of ore had been made to the English and Australian Copper Company, whose operations have been carried on with increased vigour, and which is evidenced by the fact that no less a quantity than 1231 tons of fine copper have been received by them during the past six months."

Mr. PHILLIPS enquired for what period the renewal of the patent had been obtained?

The CHAIRMAN replied it had been renewed for five years.

Dr. GODDARD enquired what percentage of ore Henderson's patent could profitably reduce?—The CHAIRMAN replied that Mr. Henderson undertook to reduce 17 per cent. ores to a product of 65 per cent., and even to copper itself. As in various parts of the colony there were being rapidly opened out enormous quantities of minerals, their company were no longer solely dependent upon the Burra Burra Mine, so there could be no question it rested upon a very wide and firm basis of prosperity; and if the principle of strict management were continued to be carried out, their present position, however favourable it was, did not at all evidence the prosperous position in which the undertaking would be placed in a few years. He had admitted to state that the absence of their Chairman (Mr. Schneider), which they must all regret, was occasioned by a domestic illness.

Dr. GODDARD enquired whence the capital had been obtained for the erection of the new furnaces?—The CHAIRMAN replied that proprietors were aware they possessed a reserve fund, which, under careful supervision, had been gradually increased, and which he wished should not in any way be touched. By the addition that would this day be made it would stand at 10,000t. Three per cent. Consols. Now, as they had no doubt the new works would be paid for during the current year by the saving which would be effected to the reserve fund being entrenched upon. As those works would not be completed for some time, their cost would be a matter for consideration next year. In all probability they would find the works would cost them, everything included, about 10,000t., that the proposition would be to let the cost run over two or three years. In answer to other questions, he stated that the dividend of 2s. 6d. per share which he was about to propose would absorb, including the amount to be carried to the reserve fund, a sum of 9620t., to meet which there would be 12,000t. in the hands of the bankers. The actual financial position of the company upon this side, after the payment of all liabilities and the realisation of all assets, would be a credit of about 22,000t.

A dividend of 2s. 6d. per share for the current half-year having been declared, a vote of thanks to the Chairman was passed, when the proceedings terminated.

### FOREIGN MINES.

UNITED MEXICAN.—June 13: Mine of Jesus Maria y Jose: This mine is quite as favourable a situation as when I last reported, and if, as is expected, a "conducta" leaves for the coast early next month, I shall be enabled to make another remittance to a fair amount, though less than that sent off in April. The profit in May on five weeks was \$10,976, and two very good raspas (gold) have just been received from Casa Blanca and Duran, worth, duties, &c., deducted, \$16,500. In the last three weeks 3034 cargas of ore have been extracted by day miners, of which 1600 cargas were sold for \$14,627. The buscones' sales, \$4306, half on the mine account.

ST. JOHN DEL REY MINING COMPANY (Limited).—Advices from Brazil:

Morro Velho, July 17.—PRODUCE: I have very great pleasure now in advising the largest monthly produce yet obtained in Morro Velho. The gold extracted in the month of June amounted to 42,066 oits.; it has been derived as follows:—

Oitavas	Tons stone.	Oits. per ton.
From General stamps .....	23,579	..... from 3785 6 = 175
" Herring (East Bank) .....	8,219	..... 1025 6 = 8013
" Lyon (W. & Mid. Cach.) ..	5,866	..... 976 8 = 617
" Arnastre .....	1,927	..... = 0 331
" Praia stamps and arrastres. ....	2,195	
..... Total stamps and arrastres. ....	42,086	..... 5788 0 = 6 890

The above produce cannot be compared with any previous month, being the largest and best monthly return yet obtained. The general standard yield from the ore treated, and also the produce per diem, are the highest on record. This result is gratifying for a 30-day month, having five Sundays and one general holiday—St. John's Day.

COST AND PROFIT.—Produce for June being 42,066 oits.

Less loss in melting .....

Leaving .....

..... 41,847 oits. at 7s. 7d. per oit. £15,866 19 9

The cost for June is Rs. 83,642 £475, exchange 2s. 2½d. .... 9,235 10 5

This leaves the profit for June of ..... £ 6,631 9 4

This is a better profit than was realised in May, though not quite so large as was shown in March, these months having 31 days each. The rate of exchange is rather high, and acts unfavourably on the cost in sterling, but the prices in materials and provisions have been rather below the average. The cost is not larger than might be expected taking into account the extra work we are now carrying on, the benefits from which will be more fully derived hereafter.

EAST KONGSBERG.—The following extracts from a letter received this day from Mr. D. T. Macdonald, dated Kongsberg, 15th inst., will, I am sure, be read by you with satisfaction:—Stamping Mill: With respect to a stamping mill, Mr. Rorham is preparing the plan of one, and will send it with an estimate as soon as possible. He does not intend to ask you to lay out so much money as the Vinoren Company did; probably less than a half will be sufficient for our requirements. The place for erecting it is already laid out on the bank of the Ramborg River. Traders have visited the place, and have given in estimates of the cost of erecting, &c. Atte: I have no doubt whatever that the Anna Sophia atle will turn out as rich, if not more so, than the Vinoren's. I am now keeping an account of all the ore to add to the stock every week. As for the malm, we can gather any quantity of it from the waste heaps wherever we have our stamps ready. The box of malm sent to London contained specimens from all the mines we are at present working. With respect to the mines, I beg to report as follows:—Sundse: We have set the sink in this mine to four men, at 84 per lachter; also a stope to the east of the sink to two men, at 240 per cubic lachter. The drum still continues to give silver in every blast. We have discovered a small vein leading from the drum to the principal vein. We hope that the drum will increase in size and productiveness in depth.—Ramarad: We have set the top stope in this mine to two men, at \$22 per lachter; the bottom stope to two men, at \$36 per lachter. The vein in this mine is still poor, but we have good hopes of getting silver in the bottom stope this month. The adit leading into this mine has been set to two men, at \$20 per lachter; the ground is easy for draining. We have intersected a vein of calcareous spar in driving this adit, which will be well worth trying when the adit is finished. Mr. Rorham will send you a sketch of Ramsrud Mine, showing the position of this vein and his proposed plan of working it.—Neus Ginek: We have set the driving of the adit and counter adit to four men, the former at \$16 and the latter at \$12 per lachter. The ground is favourable for driving.



of ore per fathom. The lode in the stopes in the bottom of the 44 is 2 ft. wide, and will yield 1½ ton of ore per fm. In the 54, west of Kendall's shaft, we have intersected a cross-course, which has now the lode, but we have commenced driving south to cut the lode west of the cross-course. In the 64 fm. level cross-cut south the ground is still favourable for driving.

PROSPER UNITED.—W. H. Martin, Aug. 22: At Louisa's engine-shaft the water is drained 6 ft. below the 30, and the shaft cut down to it within 4 fms. We have been into the 30 both east and west, but could not proceed to the extent it has been driven, in consequence of an accumulation of stuff deposited there by the tributaries in the late working; still the level, as far as it has been seen, is in a good state. The lode in the back is from 4 to 6 ft. wide, having a very fine appearance. As soon as the whim-shaft, which was sunk on the course of the lode, is ready for drawing, which will be in the course of a few days, we shall at once begin to clear it out. At Hosking's the water is drained 2 fms. below the 20, and the shaft cut down to this level. The sumpmen at this shaft are engaged cutting ground for plunger-lift, and until the lits in both shafts are fixed we shall not be able to drain the mines below the present depth. Marchion's lode in the new shaft, which is sunk about 15 fms. from surface, is at present 1 ft. wide, composed of quartz, mastic, and black and yellow copper ore, but not enough to value. The drainage of the mines so far has been attended with complete success, and the engines continue to work exceedingly well. The winding-engines and steam-captains are being got on with as fast as possible.

PROVIDENCE.—Wm. Hollow, August 21: Higgins' Shaft: No. 3 carbona is worth 35¢ per fm. No. 4 carbona is worth 20¢ per fm. The stopes in bottom of the 75 east are worth 12¢ per fm.—New South Lode: In the 65 east of the cross-cut, the lode is 2 ft. wide, composed of gossan, spar, and mastic—a strong, fine-looking lode, but is unproductive.

ST. DAY UNITED.—E. Ralph, Aug. 17: No change to notice in these mines since last report. Billing's shaft is sunk to the 164; we shall begin to drive both east and west at the 164 next week.

ST. IVES WHEAL ALLEN.—H. Taylor, Aug. 22: Roderick's Lode: In the 20, west of Louisa's shaft, the lode is 4 inches wide, worth 4¢ per fm.—Giesler's Lode: In the 50 west the lode is 2 ft. wide, worth 6¢ per fm. In the stopes in the back of the 50 west the lode is disordered by a change of ground; worth 5¢ per fm. In the stopes in the bottom of the 30 east we have about 2½ ft. to reach the tin ground. We are getting the steam-stamps as fast as possible.

TEES SIDE.—R. Bray, August 21: I send the Providence wheel to work on Monday afternoon, after changing the bucket, and this morning the water was 3 fms. above the 20 fathom level; it will take this week to drain the water to bottom of the shaft, after stopping four days and a half. The wheel is forking the water first-rate.

TOLCARNE.—Aug. 21: The lode Field's shaft is 2½ ft. wide, and worth 2 tons of good ore per fathom for the length of the shaft (12 feet). The lode in the 30 west yields 1 ton of ore per fathom. The 30 east is not looking quite so well as when last reported. In the 20 west the lode is 2 feet wide, composed of gossan and good stones of grey ore. In the 20 east the lode is 2 feet wide, of gossan and spar. The 10 east yields ½ ton of ore per fathom. In the adit east of the shaft, the lode is 2 feet wide, worth 1 ton of ore per fathom.—Enthoven's Lode: The stop in the back of the adit, west of cross-cut, is worth for tin 25¢ per fathom. We still continue to stop the back of the adit, west of the cross-cut; the lode is worth for tin about 25¢ per fathom. We have sampled 72 tons of ore.

TREFFRY CONSOLS.—J. Phillips, July 27: The east and west lode is laid open at surface, and several pits sunk on the back of it, about 6 feet deep, all showing good samples of lead; the lode is about 3 ft. wide, underlying south about 2 ft. per fathom, composed of gossan, sugar spar, prian, mastic, and lead. I was not a little surprised when on the mine last Thursday to see such rich samples of lead taken from those pits. I saw the gossan worked, and there were rich stones of lead in it; the small was braised, and proved to be a good sample of lead, such as is rarely to be seen, especially at so shallow a depth. A shaft is commenced sinking to the 10, and across-cut will be driven to cut the lode at that level, and, no doubt, from the richness of it at the surface, a good lode will be met with.

There are several other lodes in the set equally promising, one of which is a north and south lode. It evidently appears to me that great deposits of lead may be expected at a deeper level, more especially from such a beautiful stratum of ground, being a light blue killas, very like that of East Wheal Rose, the richest lead mine ever found in Cornwall.

TRELOWETH.—T. Richards, Aug. 22: In the engine-shaft, sinking below the 134, the ground is not so hard as formerly, and worth about 12¢ per fathom. The 134 end, driving east, is worth 10¢ per fm. The 134 end west is spotted with copper ore, but it does not improve so rapidly in value as might have been anticipated. The winze below the 124 west is worth 25¢ per fm. for copper ore. The sump-winze sinking under the 124 east is worth 20¢ per fm. The 124 end west is worth 12¢ per fm. The lode in the 124 end, driving east, contains a little ore. Other places are without alteration.

TRENCROM.—R. Hollow, F. Bennetts, Aug. 22: In the 100, east of Giesler's engine-shaft, the lode at present is disordered by the cross-course. In the 100, west of the engine-shaft, the lode is worth 3¢ per fathom. In the 90, east of the engine-shaft, the lode is worth 3½, 3½, per fathom. In the 80, east of the engine-shaft, the lode is not to value. In the 60, west of the engine-shaft, the lode is worth 2½, 3½, per fathom. In the 60 cross-cut, north, east of the engine-shaft, there is a lode intersected about 32 fathoms north of the engine lode. The cross-cut is driven on the cross-course, and the lode is not settled to give its value. In the 60 cross-cut south, on the cross-course, east of the engine-shaft, no change to notice. In the 40, east of the engine-shaft, the lode is worth 2½, per fathom. In the 30, east of the engine-shaft, the lode is worth 1½, 1½, per fathom. In the 20, east of the engine-shaft, the lode is worth 4¢, 10¢, per fm. In the 20, east of flat-rod shaft, the lode is worth 4¢, per fm.

TREVENEN AND TREMENHEERE.—R. Webb, Aug. 22: We have cleared 10 fms. east of the engine-shaft on the bottom at the 170, and have a good tinny lode for that distance, but have not yet broken up any of the lode, and cannot report its worth as yet; we shall continue to clear further east. The lode in the 170 end west is worth 10¢ per fm. We calculate to have several fathoms yet to clear to the whole ground. From the appearance of the lode in the 140 westward, the 150 and 170 will open out valuable tin ground. During the past month the mine has been opening out very satisfactorily. I have nothing new to report on the upper levels, where we have been getting the returns of tin from the old workers' refuse.

TREWEATHA.—J. Scoble, Aug. 20: The ground in the 30 cross-cut remains without alteration, still letting out a quantity of water. The lode in the 15 south is much the same as last week, producing saving work: the stop in the back of the 15 is worth 4¢ per fm. of lead.

TRUMPET UNITED.—G. R. Odgers, Aug. 17: The lode in the engine-shaft is 6 or 7 in. wide, producing good tinny work; if we could save it it would be worth 5½ per fathom. The lode in the slope above the 15 east is worth about 2½ per fm. The lode in the 15 west is 9 in. wide, producing very good work for tin, worth about 7½ per fathom; this has improved, and as there is a small cross-course before it, we are expecting it will continue. There is no alteration in the flat-rod shaft.

UNITED MINES (Tavistock).—J. Tucker, Aug. 21: The sinking of the shaft will be completed to the 73 by this day week, when the dividing and casing will be at once proceeded with, and I hope completed in another three days. There is no other material change in any part of the mine.

VALE OF TOWY.—W. Waters, T. Harvey, Aug. 20: Clay's shaftmen are making good progress in sinking below the 100, the lode in the present bottom being wide, composed of barytes, lime, and blende, with a good mixture of copper ore throughout; the lode is underlying much faster than of late, and will soon be all over the shaft. In the 100, driving north of shaft cross-cut, the lode is 4 to 5 feet wide, composed of sulphate of barytes, carbonate of lime, and blende, with spots of lead ore, but not to value. In the 100, driving south of great cross-course, the lode is small and the ground hard and unproductive. In the 90, driving south of Field's shaft, the lode is 2½ ft. wide, composed of barytes and lumps of ore, of a promising character. In the 80, driving north of Clay's shaft, the lode is 4 to 5 feet wide, yielding saving work for lead ore. In the winze sinking below the 80, south of Field's shaft, the lode is 2½ feet wide—tribute ground. In the adit level, driving south of Nant's shaft, the lode is 2 feet wide, composed of barytes and gossan, but not to value for lead ore. Tribune department much as usual. We are busy getting up the tribute ore and preparing for the next sampling.

WENDRON CONSOLS.—J. Taylor, E. Jenkins, W. Johns, Aug. 21: At the engine-shaft six men are engaged taking down the lode standing south of the rise, which has been holed from the 45 to the 35; this lode is 4 ft. wide, worth 15¢ per fathom; stopping at 7. Two men are engaged driving the 25, west of engine-shaft, in the country to the north of the lode, to expedite the hoing to the 25, coming east from Robert's shaft. At Bal Dees the shaftmen are engaged rising towards the new shaft from the 35; this shaft is sunk 2 fathoms below the 25, and we expect in one month from this time to hole the shaft to the 35, when we shall fix an 18-in. lift in that level, to pump the water to surface. The 35 is driven east of Bal Dees 20 fms.; lode 3 ft. wide, worth 6¢ per fathom; driving by six men, at 4½. The 20 is being driven west of shaft, on north lode, by two men, at 11. 6s. per fm.; lode 1 ft. wide, worth 2½ per fm. The tribute pitches in this part of the mine are yielding their usual quantity of tin. Bishop's shaftmen are engaged fixing lift, and will this week resume sinking below the 32; lode in the shaft 1½ ft. wide, worth 12¢ per fm., and will sink for 25½. The engine lode, west of Bishop's shaft, in the 32, is 2 ft. wide, worth 10¢ per fm.; driving by four men, at 7. No. 2 stopes, in back of 32, east of shaft, are worth 12¢ per fm.; stopping by four men, at 21. 10s. The lode in the 42, east of shaft, is 2 ft. wide, worth 12¢ per fm.; driving by four men, at 8. The masons are busily engaged building the house to receive the new 50-inch cylinder engine at Bal Dees part of the mine. We are getting on satisfactorily in the tin-dressing department.

WENTWORTH.—W. Waters, Aug. 21: The walls of the wheel-pit are completed, and we are now about to commence erecting the wheel, stamps, &c. The ground for building the carpenter's shop, smithery, and store-room is levelled, and ready for the masons to commence operations, for which the fine weather is very favourable. Both the north and south tin lodes continue to maintain their character, producing good work.

SORTRIDGE CONSOLS.—R. Jackson, Aug. 23: In the 74 cross-cut south we have intersected No. 2 south lode; the lode is 1 ft. wide, yielding good stones of ore. In the 62 west the lode is 2 ft. wide, yielding a little ore. In Mayne's rise, in the back of the 50, on the south part of the main lode, no lode has been taken down. In the 50, driving south, west of Crew's cross-cut, and west of the eastern cross-course, no lode has been taken down this last week. In the 50, west of Mayne's cross-cut, on No. 2 south lode, the lode is small and unproductive. In Blanchard's stopes, in the bottom of the 40, the lode is worth 1 ton of ore per fm. In Rowes' stopes, in the back of the 40, the lode is worth 2 tons of ore per fm. In Mayne's rise, in the back of the 30, no lode has been taken down this last week. There is no change to notice in any other part of the mine.

SOUTH BRYN GWIOL.—August 20: The lode in the level east is still producing good stones of ore, and much easier to drive. Dunsford's shaft is continuing rather hard to sink, and the limestone dark in colour.

SOUTH CARADON WHEAL HOOPER.—W. C. Cock, Aug. 16: The lode in the 62 west is much improved, being worth about 8¢ per fm. for copper ore; the character of the lode is very different from that of the last improvement, being very rusty, so much so that we can see 3 or 4 ft. ahead; before we opened the vein the water was issuing from every fissure, but at the present time the upper part of the end is quite dry, while a stream of water is rising from the bottom of the end, which, in my opinion, indicates a large and loose lode underneath; I regard these changes in the lode, and the ground which is much easier for driving, as being the most important we have ever had. The end at the present time would let at 8¢ per fm. The lode in the shaft is a little larger. The 47 cross-cut is harder. We have no change in the winze.

SOUTH CONDURBOW.—J. Vivian, W. Thomas, Aug. 17: The engine-shaft is now down to the 40, and the said level set to drive east and west. In the western end of the lode is 2½ ft. wide, composed of gossan, spar, and malleable copper. In the eastern end the lode is 2 ft. wide, composed of gossan, spar, and mastic. The western end is set at 3½, and the eastern at 4½ per fm., to six men and three boys. In the 15 east the lode has improved in appearance, and is now 3 ft. wide, composed of gossan, spar, and mastic, impregnated with copper; set to two men and two boys, at 2½, 10s. per fm. In the adit west the lode is 4 ft. wide, composed principally of peach, containing a little tin, set to two men and two boys, at 4½, 15s. per fm. In the adit end, east of Thomas's shaft, the lode is 2 ft. wide, unproductive, set to three men and three boys, at 3½, 15s. per fm. In Painter's shaft, the adit west of cross-course, is driving on a south lode, which is 4 ft. wide, composed of peach, and we hope to resume sinking the engine-shaft in about one month.

SOUTH CRENVER.—E. Chegwin, Aug. 20: In the flat-rod shaft, sinking below the 105, the lode is 1½ ft. wide, producing good stones of copper ore. No lode taken down in the 105 east for the week. Our tribute pitches in the old mine are much as last reported.—South Mine: In the 51, east of cross-cut, on new south lode, the lode is 3 feet wide, producing good stones of tin and spots of copper ore. In the 51, west of cross-cut, on new south lode, the lode is 2½ ft. wide, producing stones of tin and stones of copper, or not to value. Our tribute pitch in the bottom of the 32, on the middle lode, is looking well.

SOUTH DOLCOATH AND CARNARTHEN CONSOLS.—Wm. Roberts, Aug. 21: In the 50 cross-cut north there is no alteration since last reported. In the adit, driving east on the caunter, the lode is about 1 foot wide, with a promising appearance. The stopes in the back of the adit produce ½ ton of good ore per fm.

SOUTH TOLGUS.—Aug. 21: Our sumpmen at Michell's engine-shaft are cutting claster-plat in the 130, consequently we have not done anything in sinking the shaft since last reported. In the 130 west the lode is 2 feet wide—unproductive. In rising in the back of the 120 west we have holed to the winze sunk from the 110; this has given us good ventilation in this part of the mine. The two stopes in the back of the 120 west each yield 3 tons of ore per fathom. The lode in the winze sinking in the bottom of the 120 west is unproductive. The lode in the 110 west is chiefly of spar. The 100 west yields 1 ton of ore per fathom. The lode in the rise over the back of the 100 west is 1 foot wide, chiefly consisting of mastic. We have resumed the driving of the 90 west, which yields 1 ton of ore per fathom. The lode in the 65 west is small and poor.—South Lode: The lode in the 120 east is 2 feet wide, of peach and spar. No lode has been taken down in the 120 east since last reported. The lode in the winze sinking in the bottom of the 120 east is 18 in. wide—unproductive. In the 110 east the lode is 15 in. big, of soft spar and prian, and a little ore.

looking kindly. The same will apply to the 100 east. Two stopes in the back of the 110 east each yield 1½ ton of ore per fathom. We have intersected the north lode in the 90 cross-cut, west of Michell's shaft, north from Youren's lode; the lode is 2 ft. wide, composed of peach, spar, and mastic—a strong, fine-looking lode, but is unproductive.

ST. DAY UNITED.—E. Ralph, Aug. 17: No change to notice in these mines since last report. Billing's shaft is sunk to the 164; we shall begin to drive both east and west at the 164 next week.

ST. IVES WHEAL ALLEN.—H. Taylor, Aug. 22: Roderick's Lode: In the 20, west of Louisa's shaft, the lode is 4 inches wide, worth 4¢ per fm.—Giesler's Lode: In the 50 west the lode is 2 ft. wide, worth 6¢ per fm. In the stopes in the back of the 50 east the lode is disordered by a change of ground; worth 5¢ per fm. In the stopes in the bottom of the 50 east the lode is about 2½ ft. to reach the tin ground. We are getting the steam-stamps as fast as possible.

TEES SIDE.—R. Bray, August 21: I send the Providence wheel to work on Monday afternoon, after changing the bucket, and this morning the water was 3 fms. above the 20 fathom level; it will take this week to drain the water to bottom of the shaft, after stopping four days and a half. The wheel is forking the water first-rate.

TOLCARNE.—Aug. 21: The lode Field's shaft is 2½ ft. wide, and worth 2 tons of good ore per fathom for the length of the shaft (12 feet). The lode in the 30 west yields 1 ton of ore per fathom. The 30 east is not looking quite so well as when last reported.

In the 20 west the lode is 2 feet wide, composed of gossan and good stones of grey ore. In the 20 east the lode is 2 feet wide, of gossan and spar. The 10 east yields ½ ton of ore per fathom. In the adit east of the shaft, the lode is 2 feet wide, worth 1 ton of ore per fathom.—Enthoven's Lode: The stop in the back of the adit, west of cross-cut, is worth for tin 25¢ per fathom. We still continue to stop the back of the adit, west of the cross-cut; the lode is worth for tin about 25¢ per fathom. We have sampled 72 tons of ore.

TREFFRY CONSOLS.—J. Phillips, July 27: The east and west lode is laid open at surface, and several pits sunk on the back of it, about 6 feet deep, all showing good samples of lead; the lode is about 3 ft. wide, underlying south about 2 ft. per fathom, composed of gossan, sugar spar, prian, mastic, and lead. I was not a little surprised when on the mine last Thursday to see such rich samples of lead taken from those pits. I saw the gossan worked, and there were rich stones of lead in it; the small was braised, and proved to be a good sample of lead, such as is rarely to be seen, especially at so shallow a depth. A shaft is commenced sinking to the 10, and across-cut will be driven to cut the lode at that level, and, no doubt, from the richness of it at the surface, a good lode will be met with.

There are several other lodes in the set equally promising, one of which is a north and south lode. It evidently appears to me that great deposits of lead may be expected at a deeper level, more especially from such a beautiful stratum of ground, being a light blue killas, very like that of East Wheal Rose, the richest lead mine ever found in Cornwall.

TRELOWETH.—T. Richards, Aug. 22: In the engine-shaft, sinking below the 134, the ground is not so hard as formerly, and worth about 12¢ per fathom. The 134 end, driving east, is worth 10¢ per fm. The 134 end west is spotted with copper ore, but it does not improve so rapidly in value as might have been anticipated. The winze below the 124 west is worth 25¢ per fm. for copper ore. The sump-winze sinking under the 124 east is worth 20¢ per fm. The 124 end west is worth 12¢ per fm. The lode in the 124 end, driving east, contains a little ore. Other places are without alteration.

TRENCROM.—R. Hollow, F. Bennetts, Aug. 22: In the 100, east of Giesler's engine-shaft, the lode at present is disordered by the cross-course. In the 90, east of the engine-shaft, the lode is 3½, 3½, per fathom. In the 80, east of the engine-shaft, the lode is not to value. In the 60, west of the engine-shaft, the lode is worth 3½, 3½, per fathom. In the 60 cross-cut, north, east of the engine-shaft, there is a lode intersected about 32 fathoms north of the engine lode. The cross-cut is driven on the cross-course, and the lode is not settled to give its value. In the 60 cross-cut south, on the cross-course, east of the engine-shaft, no change to notice. In the 40, east of the engine-shaft, the lode is worth 2½, per fm. The 124 east is worth 12¢ per fm. The 124 end, driving east, contains a little ore. Other places are without alteration.

TREVENEN AND TREMENHEERE.—R. Webb, Aug. 22: We have cleared 10 fms. east of the engine-shaft on the bottom at the 170, and have a good tinny lode for that distance, but have not yet broken up any of the lode, and cannot report its worth as yet; we shall continue to clear further east. The lode in the 170 end west is worth 10¢ per fm. We calculate to have several fathoms yet to clear to the whole ground. From the appearance of the lode in the 140 westward, the 150 and 170 will open out valuable tin ground. During the past month the mine has been opening out very satisfactorily. I have nothing new to report on the upper levels, where we have been getting the returns of tin from the old workers' refuse.

TREWEATHA.—J. Scoble, Aug. 20: The ground in the 30 cross-cut remains without alteration, still letting out a quantity of water. The lode in the 15 south is much the same as last week, producing saving work: the stop in the back of the 15 is worth 4¢ per fm. of lead.

## FOREIGN MINING, AND THE NEW TARIFFS—NO. IV.

Information collected with regard to the coal production of the Valenciennes (Nord) coal basin shows that the extraction amounted in 1860 to 18,327,805 hectolitres, of which 17,045,705 hectolitres were available for commercial purposes, and sold for 21,192,150 frs. The number of pits in the district is 62, but three of these (two at Vieux-Condé, and one at Odomez) were not in operation in the year; 14,066 men were employed (11,648 below ground, and 2418 on the surface), and 99 steam-engines, of 4419-horse power, were used in the extraction of the product and for drainage and ventilating purposes. The number of horses employed on the surface and for traction purposes below was 785. The gross quantity of coal extracted was 18,327,805 hectolitres, but of this quantity 1,192,704 hectolitres were consumed on the spot either by the engineer or workpeople, leaving the quantity available for sale as stated above—17,045,715 hectolitres. The largest share in this production is borne by the Compagnie d'Anzin, which had last year 36 pits in activity at Anzin, Raisnes, Denain, Saint-Saulve, Vieux-Condé, Fresnes, and Odomez, employing 55 steam-engines, 8591 workmen, and 497 horses, and producing 9,792,681 hectolitres available for sale. We hope shortly to enter into similar details with respect to the basin of the Pas-de-Calais.

Some further particulars may be supplied with respect to the mineral industry of the province of Hainaut. Ironstone was raised last year from 32 workings open to the air, and 195 subterranean workings. The mean depths of the workings were 22 metres (or about 70 ft. English), and the quantity of ore raised amounted to 218,590 tons of rough minerals, and 146,345 tons of cleaned ditto, representing together a value of 1,290,300 frs. There existed at the same time in the province 387 quarries, having 414 workings in activity, of which 344 were open to the air and 70 were subterranean. The processes of extraction and drainage necessitated the employment of 108 steam-engines, of 1547-horse power; 619 horses and 9301 workmen were employed, and the value of the product was 9,729,870 frs. There are only three blast-furnaces in the province worked with charcoal, and these are all three "out." The number of furnaces worked with coke was 44, of which 25 were in activity, and they were served by 36 steam-engines of 1781-horse power, and 2282 workmen. The production of 1860 consisted of 46,490 tons of cast-iron, and 137,420 tons of refined iron, or 183,910 tons in all; the materials consumed having been 507,250 tons of minerals, 213,410 tons of limestone, and 242,600 tons of coke. The value of the product was 15,419,830 frs., of which 4,853,738 frs. referred to iron of the first-class, and 11,066,092 frs. to iron of the second-class mentioned. As regards the process of further refining and working up the *fond* into marketable iron of various kinds, the number of refining-houses in use was 2, of forges 3, of puddling-works 152, of re-heating-works 68, of great hammers or squeezers 28, of ordinary hammers 22, of shears 55, of rolling establishments for making rails 8, plates 6, &c. The number of steam-engines employed was 62, of 2273-horse power, and of water-wheels 45, of 627-horse power; 2851 men were also engaged. The consumption of raw iron was 132,030 tons, of charcoal 280 tons, and of coal 240,230 tons; and the production of marketable iron was 101,455 tons, value 18,337,700 frs. There was one establishment in activity for the fabrication of steel, employing 7 steam-engines, of 149-horse power, and 25 workmen, and producing 80 tons of steel, of the value of 108,000 frs.

The total value of the products of the mineral industry of Hainaut in all its branches—coals, ironstone, marble, stone, lime, iron, steel, glass, &c.—was estimated last year at 150,531,803 frs., being 7,271,247 frs. in excess of the corresponding total in 1859. This imposing result was, however, not attained—at any rate, so far as mining is concerned—without some very serious accidents, involving a total loss of 150 lives, being an excess of 15 over the number killed in 1859. Of a total of 137 accidents, 20 were caused by failures in the ropes or chains by which the miners descended or ascended (28 killed, 2 wounded); 5 by defective ladders (5 killed); 12 from other circumstances of a kindred character (13 killed, 3 wounded); 39 by falls of rock or coal (33 killed, 7 wounded); 11 by fire (*coup de feu grisou*)—28 killed, 18 wounded; 1 by inundation (1 killed); 2 by suffocation (2 killed); 23 by falls of rolling-wagons (19 killed, 40 wounded); and 17 from various other causes (18 killed, 3 wounded). The most frightful of these accidents occurred on Dec. 23 last, when a cage containing 10 men fell to the bottom of the St. Henri pits, in the Bayemont Colliery, at Marchiennes-au-Pont, the whole of the poor fellows being killed. Since this terrible disaster—although we in England can, unhappily, refer without much difficulty to still more awful casualties—the proprietors have provided a new machine, specially constructed for the purpose of enabling the miners to ascend and descend with, it is to be hoped, greater safety.

M. Mahaux, an old director of collieries in the Charleroi district, has invented an apparatus for ventilating mines, which is said, among other merits, to possess a force only subordinate to the power of the motor, while rotatory pumps are considered, on the contrary, to have attained the greatest development of which they are susceptible. The apparatus of M. Mahaux is very simple, easy of introduction, and inexpensive to maintain; but the estimate made by M. Mahaux of the cost, although exact, perhaps, for Charleroi, is not applicable to all localities, since the price of wood, masonry, and manual labour differs in each district. The price of the machines would thus vary considerably, but the calculations of M. Mahaux may serve as a basis on which other reasoning may be founded by those who desire to give the ventilator a trial. M. Jochams has given a succinct description of the apparatus in Vol. XV. of the "Annales des Travaux Publics," and has narrated the results of several experiments undertaken to test its power; but the machine has since been simplified and improved. The ventilator consists of two wooden vessels, in which two pistons move, each having four valves, the same number also existing at the bottom of the vessels. Between the two vessels a horizontal cylinder high-pressure steam-engine gives a direct up and down movement to the air-pistons, which meet at each end iron cross-bars fixed on wooden framing. The steam-piston opens the valves at the bottom of the cubes, or wooden vessels, and the air behind them can thus enter. On the steam-pistons retrograding, and closing them, the valves in the air-pistons are opened, and the air enclosed in the cubes put in communication with the atmosphere. Air is thus made to circulate at a speed of 12 ft. or 15 ft. per second, the volume of air put in motion depending, of course, on the size of the machine. The cost of a machine capable of extracting and circulating 20 cubic metres of air per second with a vent of 2½ metres (about 8 ft. 4 in.) is estimated by M. Mahaux at 12,546 frs.

M. Grateau, mining engineer, in a note on the fabrication of iron at Halberg, near Saarbrücken, in Rhenish Prussia, where an excellent iron for carriage axles is produced, states that the return price at which 100 kilogrammes of small iron are made is 54 frs. 4 c.—that is to say, about 230 lbs. English, at 27. 5s. This high price is ascribed to the dearness of the iron produced by charcoal. The use of coke, which can be obtained at a reasonable price in the basin of Saarbrücken, would effect a considerable saving, and coal would secure a still greater economy; but the fabrication of axles being the object specially aimed at by the Halberg forge, its managers endeavour to secure an iron peculiarly adapted for that purpose, and the iron obtained by charcoal is considered preferable to that in the production of which coal has been used. The profit made is estimated at 2 frs. 89 c. per 100 kilogrammes on small iron; on large iron it is at least double. In contrast with these high rates maintained for a special and little-developed fabrication, it may be interesting to give the return of prices at which iron is produced at a large establishment some kilometres from Halberg, worked after the English fashion. This establishment of Nenekirchen comprises three blast-furnaces worked with coke, and the minerals employed are those of the surrounding district and the Duchy of Nassau. The mineral of Nassau gives a mean return of 48 per cent., and that of the Rhine 30 per cent., the real content of iron in these minerals being 5 or 6 per cent. higher. Cast *fond*, for which the mineral of the country is alone employed, is produced at 10 frs. 94 c. per 100 kilos., and refined *fond* at 13 frs. 41 c. per 100 kilos. giving a mean of 12 frs. 50 c. M. Grateau, taking these figures as a guide, calculates the cost of rough puddled iron at Nenekirchen at 16 frs. 31 c. per 100 kilogrammes; of small hammered iron at 21 frs. 71 c. per 100 kilogrammes; of large hammered iron at 21 frs. 59 c. per 100 kilogrammes; and of rails at 21 frs. 34 c. per 100 kilogrammes. The French and Prussian Governments, by a convention concluded in April, and the full and entire execution of which is ordered in a decree just issued by the Emperor Napoleon from Vichy, have determined on the construction of an international canal for the accommodation of the collieries of the Sarre district. The French Government engages to execute, between the canal from the Marne to the Rhine and the Prussian frontier, a canal commencing at the Vosges mountains, and ending at Sarreguemines; and the Prussian Government engages to prolong the work over its territory as far as Louisenthal, either by means of a canal by the side of the Sarre, or by rendering the Sarre itself navigable. A uni-

form tariff of dues is to be established between France and Prussia over the whole extent of the canal, and is to be determined by the two Governments at some future time. The works are to be pressed forward as rapidly as possible, and a mixed commission, composed of engineers selected from both countries, is to be charged with any technical questions which may arise during the prosecution of the undertaking, and especially the mode of prolonging the canal on the Prussian territory.

The Compagnie Franco-Serbe, which has established a line of bateaux on the Danube and the Save, is stated to have done so with success, each bateau, including the days on which it has not been in use, having earned on the average between 14*l.* and 15*l.* per day since June 1. The coal mines of Dobra, on the shores of the Danube—part of the operations of the company—furnish coal suitable for the consumption of steam-ships. The coal is mixed with common descriptions, but burns nevertheless purely, and with a saving of 22 per cent. as compared with Austrian coal. A blast-furnace at Maidanpêl is in operation; the *fond* obtained is good, and several orders are in course of execution. A furnace for smelting copper was, at the date of the latest advices received in Paris, almost ready to be put in operation, and mines of copper were being worked. Pyrites of sulphur, containing 25 per cent. of sulphur, had been discovered; and as foreign sulphur is prohibited on the Danube, this will be a new source of profit, some having already been sold for 1200 frs. When some improvements now in progress have been effected, hopes are entertained that copper ore and muriate will be obtained to the value of first 12,000 frs., and eventually 20,000 frs. per month. Three bateaux, suitable for heavy merchandise and passengers, were to leave Marseilles on Saturday, Aug. 17, for the Danube. Seeing that the company was only put in possession of sufficient funds in May last to prosecute its operations with vigour, the progress which it has made is considered satisfactory. Time alone can show whether the undertaking is entitled to permanent approval.

The last advices from Liege state that the prices of coals, *fond*, and iron, exhibit little change, the aspect of affairs being generally calm. This is not surprising, as the present is usually the quietest period of the year as regards coals, the consumption being confined to the current wants of local industries. In *fond* a sale of 4,000,000 kilos. of refined has been made by the Société des hauts-fourneaux d'Ougrée. The demand for marketable iron is passable, and a satisfactory enquiry has been experienced for plates for France. The Antwerp metal market has also been calm, without change in prices.

**BRAY'S TRACTION-ENGINE.**—An influential company, the prospectus of which we publish in another column of this day's Journal, has just been formed for working the patent for traction-engines granted to Mr. Bray, and the directors consider that as the Act for reducing and regulating the tolls to be demanded for the use of traction-engines has been passed, the period has arrived when the business of the company may be extended with advantage to the shareholders and to the public. The company has received numerous testimonials from eminent engineers and Government officials, and have at present an order in hand for a machine for the permanent service of Woolwich Dockyard. It is found that in actual working the expense of the traction engine is little more than half that of horse labour, and when the work is not continuous the saving is much greater, as expense is incurred by the engine only when in use, whilst horses must be fed whether worked or not. From the prospectus, it will be seen that the Marquis of Breadalbane, the Marquis of Conyngham, the Earl of Caithness, and Lord Claude Hamilton have accepted office as honorary directors, and the ordinary board comprises many well-known names. The shares are 5*s.* each, and the limited liability principle has been chosen in the constitution of the company.

**NEW MOTIVE-POWER ENGINE.**—In an invention just patented by Mr. Newton, three stationary steam-tight cylindrical chambers are employed, the middle one being fitted with a turbine of any approved construction, mounted upon a vertical shaft, which turns in bearings carried by the cylinder head. This middle cylinder is connected to each of the side cylinders by means of two pipes, one of which (from each cylinder) enters the middle cylinder above the face of the turbine, and the other below the turbine. Each pipe is governed by a shutter-valve, the slats or shutters in the upper pipes opening inwards to the middle cylinder, while those in the lower pipes open to the side cylinders. These two side cylinders are connected at top by a branch steam-pipe leading from a boiler, and in the prolongation of these branches the steam is cut off, and exhaust pipes brought into connection with the cylinders. The working of the valves is effected by annular floats, that are suspended in the cylinders from pendant rods, and which, by means of cranks and horizontal rods, are connected to arms keyed to the bottom of the valve spindles. To ensure the proper relative action of these valves, the upper ends of their spindles are connected together by means of short levers, which the curvilinear being coupled by an adjustable coupling-rod. A driving pulley is keyed to the turbine shaft for transmitting the rotary motion of that shaft to the mechanism to be driven by the engine.

## India Office.

**BY ORDER OF THE SECRETARY OF STATE FOR INDIA IN COUNCIL,** notice is hereby given that the DIRECTOR-GENERAL OF STORES FOR INDIA will be READY, or before MONDAY, the 26th instant, to RECEIVE PROPOSALS in writing, sealed up, from such persons as may be willing to SUPPLY—

## COPPER SLIPS.

And that the conditions of the said contract may be had on application at the India Store Office, Cannon-row, Westminster, where the proposals are to be left any time before Two o'clock P.M. of the 26th day of August, 1861, after which hour no tender will be received.

GERALD C. TALBOT, Director-General.

India Office, August 14, 1861.

**ESTINIOG, NORTH WALES.**—The LEASE of a SLATE QUARRY in the above locality is TO BE DISPOSED OF. It includes upwards of SIX HUNDRED ACRES of GROUND, and by three levels of 75, 50, and 30 yards respectively has been PROVED to have FOUR LARGE VEINS of SLATE ROCK of SPLENDID QUALITY and COLOUR. The grounds afford unusual facilities for the development of the works, it is situated within 1½ miles of the Estinioig and Portmadow Railway, and is unquestionably a very valuable property. Want of capital is the cause of sale. All applications must be accompanied with a reference to a London bank, or such as will not be attended to.—For particulars, apply to Wm. DAVIES, Estinioig, via Carnarvon, North Wales.

**THE COMMERCIAL UNION FIRE INSURANCE COMPANY.**—The Directors have the pleasure to inform the subscribers for shares in this company that a DEFINITE OFFER has been MADE to them by ONE of the MOST INFLUENTIAL of the OLD ESTABLISHED INSURANCE OFFICES for an AMALGAMATION, upon terms which would give the shareholders in this company an immediate and highly remunerative dividend.

The proposal emanates from a company who agree with the directors of the Commercial Union in the inexpediency of the late serious changes of rates, and the impossibility of maintaining them. The directors will not complete any arrangements without the sanction of a meeting of the subscribers to this company.

HENRY W. PEEK, Chairman.

HENRY TROWER, Deputy-Chairman.

**WALKER'S STAMPING MACHINES AND STEAM ENGINES, FOR REDUCING ALL KINDS OF MINERAL ORES TO IMPALPABLE POWDER,** have been in use for these last ten years in all the leading mines of the United Kingdom and the Colonies of the British Empire; as have also his PATENT PUMPS and WATER LIFTS, and for economy of working and durability cannot be equalled. MANUFACTORY, 17, COWPER STREET, CITY ROAD, LONDON.

FIFTEEN to TWENTY, and even TWENTY-FIVE PER CENT. PER ANNUM upon current value of shares, in CORNISH TIN and COPPER MINES.

Dividends payable two-monthly or quarterly.

MESSRS. TREDDINICK AND CO., MINING ENGINEERS, SEND their SELECTED LIST of SOUND PROGRESSIVE AND DIVIDED SHARES upon the receipt of a Fee of One Guinea.

Review of Cornish and Devon Mining Enterprise, &c., per copy.

Maps per post of the Bunter and Basset, Great Vor, Alfred Consols, the Providence and Margaret Districts, 2s. 6d. each.

Cornish Mines, well selected, pay better than any other description of securities, are free from risks, and entail less responsibilities than banks and other joint-stock companies. Shares bought and sold on commission of 2½ per cent.

Money advanced at 10 per cent. annually, for short or long periods, upon approved Mining Shares.—78, Lombard-street, London, E.C.

**BRITISH AND FOREIGN STOCK, RAILWAY, AND MINING SHARES BOUGHT AND SOLD.** A considerable amount of money is locked up in mining shares not prominently before the public, and consequently difficult of sale. MESSRS. FULLER AND CO., 26, CHANGE ALLEY, CORNHILL, LONDON, invite the holders of such stock to communicate with them, having channels for the purchase and sale of shares of every description, independent of the mining market.

FOR SPECIAL SALE.—MESSRS. FULLER and Co. have £6500 worth of shares on hand, paying regular dividends of from 12½ to 15 per cent. Also, £2750 worth of progressive shares, upon which from 200 to 300 per cent. profit may be realised in a few months, and perfectly free from risk. Full particulars may be had.

Telegraphic messages promptly attended to.

Bankers: Bank of England.

**TO CAPITALISTS.**—MESSRS. LEICESTER AND CO., INSPECTORS and VALUERS of MINES, &c., MELBOURNE, VICTORIA, OFFER THEIR SERVICES to SELECT and INVEST CAPITAL in MINING PROPERTIES, for which they charge 2½ per cent.; and they also COLLECT and TRANSMIT the DIVIDENDS, charging 2½ per cent. on their amount. MESSRS. LEICESTER and CO. earnestly call the attention of capitalists to the many opportunities they possess of investing, to pay from £50 to £150 per cent. per annum. sums under £50 will be charged extra. All remittances must be made through our agent, Mr. RICHARD M'DONALD, Mining Journal office, 26, Fleet-street, London; or direct through our bankers, the Union Bank of Australia.

## The Mining Market; Prices of Metals, Ores, &amp;c.

METAL MARKET—LONDON, August 23, 1861.

COPPER.	£ s. d.	BRASS.	Per lb.
Best selected...p. ton	101 0 0—	Sheets	83½d.—9½d.
Tough cake	98 0 0—	Wire	9½d.—
Tile	98 0 0—	Tubes	10½d.—10½d.
Burra Burra	97 0 0—		
Copiapo	96 0 0—		
Copper wire	0 1 0½—	FOREIGN STEEL.	Per Ton.
ditto tubes	0 1 0—	Swedish, in kgs (rolled)	14 0—15 0
Sheathing & bolts	0 0 11—	Ditto, in faggots	15 10—16 0
Bottoms	0 1 0—	English, Spring	18 0—23 0
Old (Exchange)	0 0 9½—	Bessemer's Engineers Tool	44 0—
		Spindle	30 0—
		QUICKSILVER	7 0 p. bottle
		SPelter.	Per Ton.
Bars, Welsh, in London	6 5 0—	Foreign	17 10 0—
Ditto, to arrive	5 17 6—	To arrive	17 10 0—
Iron rods	7 0 0—		
Stafford, in London	7 0 0—		
Bars	7 10 0—8 0 0		
Hoops	8 10 0—	ZINC.	
Sheets, single	9 0 0—9 10 0	English	
Pig, No. 1, in Wales	3 0 0—4 0 0	blocks	114 0—
Redined metal, ditto	4 0 0—5 0 0	Ditto, in barrels	115 0—
Ditto, merchant, in Tins	6 10 0—	Ditto, Redined	116 0—
Ditto, railway, in Wales	5 0 0—5 2 6	Banca	114 10—115 0
Ditto, Sw			

rich; the tin lode is worth 25/- per fm. Alfred Consols shares are flat at 19s. to 21s., owing to the stoppage of Great Alfred. Wheal Clifford, 150/- at the meeting, on Wednesday, the accounts showed a profit of 2489/- 16s. in the two months, and a dividend of 3/- 10s. per share was declared, leaving 49/- 7s. 4d. in hand; the report states that the costs for the past two months have been heavy, and this, with the drop in the standard, has reduced the dividend, but the prospects of the mine are such at present as to hold out every encouragement for future success. East Caradon shares have been in good request, and leave off 25/- to 25/-; the lode in the 60 east is worth 80/- per fm.; west, 20/- per fm.; and the 50 east, 25/- per fm. Marlo Valley, 10 to 10/-.

Great South Tolgus have been in great request, and leave off 3/- to 4/-; at the meeting, on Thursday, the accounts showed a balance in hand of 4337/- 18s. 9d.; no dividend was declared, and the mine, on the whole, is looking better. West Bassett, 14 to 16/-; the 65 west has improved, and is yielding 1½ ton of rich grey ore per fathom. Bedford Consols, 2s. 6d. to 3s. 6d.; Bryn Gwigg, 25 to 27; Calstock Consols, 4s. to 6s.; Carn Brea, 66 to 68; Devon Great Consols, 350 to 355; Drake Walls, 14s. to 16s.; East Bassett, 75 to 80; East Russell, 3 to 3½. Wheal Unity have been in considerable request, and leave off 20s. to 22s. 6d.; the 75 cross-cut is through the elan, and daily expecting to cut the lode. South Caradon Wheal Hooper also in request, and leave off 1½ to 1½; the agent values the lode in the 62 west at 8/- per fm., and improving. Grambler and St. Aubyn, 10 to 12. Great Retallack, 19s. to 21s. Great Trevedoe, 12s. to 13s., and a large business done. Great Wheal Fortune, 11½ to 12½; Herodsfoot, 34 to 36. Hingston Down advanced from 35s. to 40s.; at the meeting a call of 1s. 6d. was made. Great Crinnis, 20s. to 22s. 6d.; in the 100 west the lode is being carried for 7 feet wide, grey throughout, with a leader on the north part 1 ft. wide, increasing in size, and producing good ore. Cudra, 35s. to 37s. 6d.; no change in the mine, which continues to look well; the lode in the 60 is still worth 15 cwt. of tin per 100 sacks. Eaglebrook, 11 to 12; the mine has improved in the winze sinking from the 10 to the 20 fm. level, the lode is from 4 to 5 feet wide, 3 feet of which is in a rich course of lead ore. At Buller and Bassett, the lode in the 80 west is looking more kindly; it is 3 feet wide, consisting of friable quartz, peach, mudi, and spotted with yellow copper ore. Rosewall Hill and Ransom, 1½ to 1½; the mine is much improving; the lode in the west end of the Troon is from 4 to 5 feet wide, and worth 30/- per fm.; the winze below the 100 is worth 15/- per fm. The shaft is down 6 feet below the 110, the lode is worth 7/- per fm. Wheal Crebor, 10s. to 11s.; the lode in the 60 east is improving as it gets under where the bunch of ore was in the 48, and something good is looked for. Lady Bertha, 15s. to 17s. 6d.; Merllyn, 15s. to 17s. 6d.; New Seton, 44 to 46. North Downs have been more freely offered, and leave off 4½ to 4½. North Minera, 27s. to 29s.

Wheal Hope, 1½ to 1½; the 14, on the caunter lode, has been driven 2½ fms., and the lode increased from 6 in. to 2 ft. wide, yielding fine stones of lead, and improving. In about three weeks this lode will form a junction with the south lode, where a good deposit of lead is expected. On the other side of the slide, in former years, the mine yielded enormous quantities of rich silver-lead, and smelting-works were erected on the spot. North Robert, ½ to 1½; North Truskerby, 21 to 22; Par Consols, 8½ to 8½; Prosper United, 32s. 6d. to 37s. 6d.; Providence Mines in good demand, at 33 to 35; Sortridge Consols, 11s. to 12s. Carn Camborne shares have been largely dealt in, and leave off 1½ to 1½; the south lode in the adit end has improved, and worth from 15/- to 20/- per fm., and this will soon be cut 12 fms. below the adit. South Condurrow, 10s. to 11s. Stray Park shares have advanced to 30, 32; Tolwadden, 2½ to 2½; Trenckrom, 5s. to 6s.; Wendron Consols, 10 to 12. West Caradon shares have been more in request, at 37 to 39, after declining early in the week to 36. North Dolcoath, ½ to ½; the lode in the 20 east is looking well; it is from 12 to 18 in. wide, and producing good stones of ore, worth 6/- per fm., and driving at 45s. West Rose Down shares have further advanced to 21, 23. West Seton shares in good request, at 300 to 310. Wheal Arthur, 6s. 6d. to 8s. 6d., and mine improved. Wheal Bassett, 8½ to 90; Wheal Grenville, 32s. 6d. to 35s.; Wheal Margaret, 38 to 40; Wheal Margery, 5 to 6. Wheal Mary Ann shares have advanced to 9½, 10. Wheal Seton shares have advanced to 8½, but, after many fluctuations, leave off 65 to 70. Old Tolgus, 14 to 15; Wheal Trelawny, 13 to 14. Wheal Union, 1½ to 2; at the meeting, on Thursday, the accounts showed a balance of 452/- 5s. 3d. against the company, and a call of 4s. per share was made. The flat-roof shaft is down 4 fms. 4 ft. below the 56, where the lode is 2 ft. wide, composed of spar, mudi, copper, and tin ore, worth about 5/- per fm. In the 40, east of cross-cut, the middle lode is worth 10/- per fm. for tin. Wheal Ludcock, 3½ to 3½. South Frances shares have been in great request, and large purchases made for Cornwall on Friday, from which we presume there is some great improvement in the mine; shares leave off at 125 to 130. Long Rake, 12 to 13; the lode in the 48 east is worth 1½ ton per fm., and calculated to yield 10 tons of ore this month; and the 48 west improving. Brynford Hall, 15 to 17; improved on the Milwr vein, in the 35 yard level; lode not yet cut through, but as far as seen produces good lead. Caradon Consols, 8 to 8½, and the prospects of the mine well reported upon. Great Wheal Martha, 30s. to 32s. 6d.; the engine-shaft, sinking below the 40, is down 7 fms., with favourable indications. The crusher has gone to work, by which means the sampling will increase. West Polmear, 19s. to 20s.; East Rosewarne, 22s. 6d. to 27s. 6d.; the mine is looking better; lode cut good in the 55. Holm bush, 2 to 2½.

On the Stock Exchange, a fair average amount of business has been transacted in Mining Shares during the week. The following prices were officially recorded in British Mining Shares:—East Wheal Russell, 3½; Great South Tolgus, 3½, 4; Hingston Down, 1½; East Caradon, 24, 25, 24½; North Wheal Bassett, 4; West Caradon, 36½; South Wheal Frances, 11½, 11½; Herodsfoot, 34½, 35; Wheal Kitty, 5½; Devon Great Consols, 34½, 35; Margaret, 39; Park Consols, 9½; Wheal Trelawny, 13½. In Colonial Mining Shares the prices were:—Bon Accord, ½; Port Phillip, 1; Kapunda, 2½; Great Northern Copper of South Australia, 1½. In Foreign Mining Shares the prices were:—St. John del Rey, 35½, 35½, 36; Linares, 7½; Marquita, 2½; United Mexican, 4½, 4½, 5½; Fortuna, 2.

The closing quotations for shares in new undertakings were:—Ocean Marine Insurance, 4½, 5½ pm.; Thames and Mersey Marine, ½, 1 prem.; Universal Marine Insurance, 13-16, 11-16 dis.; London and Provincial Marine, par; Oriental and General Marine, ½, 1 prem.; and Compressed Coal, ½, 1 prem. The shares of the Mercantile and Commercial Union Fire Insurance Companies were firm, at ½, ½ prem. It is noticed that the list of applications for shares in the latter undertaking will be closed on Wednesday next. Madras Irrigation have been in great demand, and rose about 15s. per share. The enquiries extended to East India Navigation, Crystal Palace, and Peninsula and Oriental New shares. St. Katherine and East and West India Docks stocks rose 1 per cent.

At Truro Ticketing, on Thursday, 4535 tons of ore were sold, realising 26,101/- 9s. The particulars of the sale were—Average standard, 125/- 4s.; average produce, 6½; average price per ton, 5½, 15s.; quantity of fine copper, 308 tons. The following are the particulars:—

Date. Tons. Standard. Produce. Price per ton. Ore copper. July 25. . . . . 3303 £121 7 0 . . . . . 6½ . . . . . 25 2 0 . . . . . 278 16 0 Aug. 1. . . . . 3778 124 2 0 . . . . . 6 . . . . . 4 14 6 . . . . . 78 10 0 " 8. . . . . 3915 123 13 0 . . . . . 6½ . . . . . 5 10 0 . . . . . 82 8 0 " 22. . . . . 4535 125 4 0 . . . . . 6½ . . . . . 5 15 0 . . . . . 84 6 0

Compared with the last sale, the advance has been in the standard 17, 16s., and in the price per ton of ore about 2s. 4d. Compared with the corresponding sale of last month, the advance has been in the standard 5½, 10s., and in the price per ton of ore about 7s. 2d.

At Wheal Owles meeting, on Aug. 16, the accounts for the three months ending June showed—Balance last audit, 15317. 3s. 1d.; tin sold and sundries, 4627. 2s. 6d. = 61562. 5s. 7d.—Mine cost, merchants' bills, and sundries, 42497. 19s. 3d.; leaving credit balance, 19082. 6s. 4d. The profit on the three months' working was 3772. 7s. 3d. A dividend of 400/- (5s. per share) was declared, and 15082. 6s. 4d. carried to credit of next account. During the quarter 478 fms. 5 ft. 10 in. of ground has been removed. Upon an average, 34 pitches have been working on tribute.

At Wheal Clifford and Consols meeting, on Wednesday, the accounts showed a profit of 2489/- 16s.; from which deduct New Engine loss, 709. 11s. 7d., and the balance is 17801. 4s. 5d.; add balance end of May, 191. 2s. 11d. = 17992. 7s. 4d. A dividend of 3/- 10s. per share was declared, leaving 49/- 7s. 4d. to the credit of next account. The agents report that the mine holds out every encouragement for success.

At North Downs Mining Company meeting, on the 15th inst., the accounts showed a credit balance of 12941. 1s. 7d. A dividend of 750/- (2s. 6d. per share) was declared, and 5447. 1s. 7d. carried to the next account. The proceedings are given in another column.

At Hingston Down Consols meeting, on Thursday (Mr. W. A. Thomas in the chair), the accounts showed—Balance last audit, 1171. 3s. 11d.; ore sold and carriage, 1200/- 18s. 4d.; calls received, 1527. 1s. = 15077. 18s. 3d.—Mine cost, merchants' bills, and sundries, 1488. 0s. 7d.; leaving credit balance, 1097. 18s. A call of 1s. 6d.

per share was made. Capt. T. Richards reported upon the various points of operation. The next sampling will be about 300 tons of ore, and the cost for the ensuing two months, including about 35/- per month at the new shaft, will probably be 150/-.

At Wheal Moyle meeting, on Thursday (Mr. E. Cooke in the chair), the accounts for the five months ending June showed—Mine cost, 804f. 14s. 5d.; merchants' bills, 997. 19s. 7d.; royalty, 211. 2s. 6d. = 18251. 17s. 6d. Balance last audit, 2511. 12s.; tin sold, 3811. 4s. 1d.; leaving debit balance, 11931. 1s. 5d. A call of 4s. per share was made. Captains John Tregoning and George Johns reported that, on the whole, the mine never looked more cheering.

At the North Dolcoath Mine meeting, on Wednesday (Mr. W. C. Vivian in the chair), the accounts for five months showed a debit balance of 671. A call of 2s. per share was made. Soon after the commencement of operations by the present company some good deposits of silver ore were found in the gossan at the 10, and about 6000/- worth was sold, from which several dividends were paid, and an engine erected capable of working the mine to the 100. The silver, however, did not continue in depth, but the fine gossan passed through left little doubt that copper ore would be met with. Operations have, therefore, been prosecuted with vigour, in expectation of such result. Levels have been driven at 20 fathoms deep, where the lode is of a promising character throughout; the shaft has been sunk on the course of the lode, which has a slight underlie, to the depth of 35 fms., where new levels are being commenced, and the anticipations of the shareholders seem now on the eve of being realised. The latest intelligence states that in the 20 the lode is yielding yellow copper ore, worth 6/- per fm.; driving at 27. 5s.; the lode in the shaft is of good character, and there is little doubt that the 25 will prove productive. These shares were for a time at a high premium; at present the price is merely nominal, and they may be worth the attention of both speculator and investor.

At the North Levant Mine meeting, on August 13, the accounts for the six months ending June showed—Balance last audit, 911. 17s. 10d.; labour cost, 14121. 15s. 8d.; materials, 3144. 14s. 5d. = 15321. 7s. 9d.—Tin sold, 1430f. 5s. copper ore sold, 41s. 6d.; calls received and sundries, 27. 1s.; leaving debit balance, 2784. 16s. 10d. A call of 4s. per share was made. Captains Bennett and Thomas reported that they propose sinking Mexico shaft, as future prospects depend principally on developing this part of the mine.

At the Great Wheal Alfred meeting, on Tuesday (Dr. A. Beattie in the chair), it was resolved that the mine be stopped, after an amendment had been put and lost that the operations should be continued. There were 961 votes in favour of the resolution, and 475 in favour of the amendment. Details appear in another column.

At the North Great Work Mine meeting, on Tuesday, the accounts showed a balance in favour of the mine of 214f. 9s. 9d. The report of the manager—Capt. Joseph Vivian—stated it would take about five months for the 10 to reach the richest part of the ground discovered by the deep adit, and in the mean time the returns of the would meet the expenditure within 50/- per month, but there was every probability of important discoveries being made between the present point of operations and that to be arrived at. A parcel of tin will be ready for the smelting-house at the end of the present month.

At Wheal Anne (St. Austell) general meeting, on Tuesday, the accounts showed a debit balance of 801. 12s. 2d. A call of 5s. per share was made. A statement of liabilities and assets showed a credit balance of 3111. 10s. 4d. The report of Capt. W. H. Reynolds is among the Mining Correspondence.

At the English and Australian Copper Company half-yearly meeting, on Thursday (Mr. R. A. Routh in the chair), a dividend of 2s. 6d. per share was declared, which, including the amount to be carried to the reserve fund, will absorb the sum of 9520/- The present financial position of the company upon this side showed a credit of about 22,000/-, after the liquidation of all liabilities, and the realisation of all assets. From June 30, 1860, to May 25, 1861, there had been 14,659 tons of ore received from the Burra Burra Mine. During the same period there had been smelted at the works 10,373 tons, against 6891 tons during the whole of the previous year. The quantity of copper made from June 30, 1860, to June 25, 1861, had been no less than 3007 tons, against 1975 tons made in the previous year. By means of the new furnaces at the port, which are in an advanced state of progress, it was estimated that an annual saving of about 5000/- would be effected; these works are being erected for the purpose of smelting that proportion of ore which would otherwise be shipped to this country in an unrefined state. Details in another column.

At New Wheal Vaddon meeting, the accounts showed—By calls, 129/-, and to mine cost and merchants' bills paid since last meeting, 122f. 17s.; leaving at bankers 61. 2s. A statement of liabilities and assets showed a credit balance of 3111. 10s. 4d. The report of Capt. W. H. Reynolds is among the Mining Correspondence.

At the English and Australian Copper Company half-yearly meeting, on Thursday (Mr. R. A. Routh in the chair), a dividend of 2s. 6d. per share was declared, which, including the amount to be carried to the reserve fund, will absorb the sum of 9520/- The present financial position of the company upon this side showed a credit of about 22,000/-, after the liquidation of all liabilities, and the realisation of all assets. From June 30, 1860, to May 25, 1861, there had been 14,659 tons of ore received from the Burra Burra Mine. During the same period there had been smelted at the works 10,373 tons, against 6891 tons during the whole of the previous year. The quantity of copper made from June 30, 1860, to June 25, 1861, had been no less than 3007 tons, against 1975 tons made in the previous year. By means of the new furnaces at the port, which are in an advanced state of progress, it was estimated that an annual saving of about 5000/- would be effected; these works are being erected for the purpose of smelting that proportion of ore which would otherwise be shipped to this country in an unrefined state. Details in another column.

At LEEDS, AUG. 22.—In Mining Shares a slight improvement has taken place, and a fair amount of business has been transacted:—Brea Consols, 17s. to 20s.; Cornubia, 15s. to 18s.; Craven Moor, 3s. to 4s.; Merryfield, 6s. to 6s.; Nidderdale, par; North Hallenbottle, 15s. to 25s.; Wensleydale, 7s. to 8s.; Yorkshire, 10s. to 12s. 6d.

APPLETREEWICK MINE (near Skipton).—The machinery at this mine is being erected, the long level has been completed, and productive veins have been discovered. The result is that there is a considerable increase in the number of miners employed. The ore is now brought to the surface at a comparatively trifling cost, and the shares have rapidly risen in value, having within the last eight months doubled their then estimate.

The NIDDERDALE LEAD MINING COMPANY.—The half-yearly meeting of the shareholders was held at the Griffin Hotel, Leeds, on Monday, (Mr. G. P. Smith, of Bradford, Chairman of the company, presided). The balance-sheet for the past half-year, and the report of the directors, were read by Mr. T. Sykes, the secretary, and a resolution approving thereof was unanimously passed. Mr. Benjamin Calvert, the company's agent, gave a lengthy and exceedingly encouraging report of the mine, in the course of which he stated that the Sir Thomas shaft continued to produce good ore; that the rise to the Sun vein, in the Hole Bottom shaft, was still productive, and was being worked with good results, and that they were then engaged in the third smelting of lead. The meeting was well attended by gentlemen from Leeds, Bradford, Pateley Bridge, and Castleford, and a determination was expressed to work the mine with energy. The meeting was a unanimous one, and terminated satisfactorily.—JOHN GLEDHILL AND CO.

COAL MARKET.—On Monday, the 39 arrivals comprised a good number of screw-steamer, and the quantity of coal for sale of all descriptions was limited; the demand was languid, and prices closed without the slightest change. Best house coal, 18s. 3d. to 18s. 9d.; seconds, 16s. to 17s.; Hartley's, 15s. to 16s.; manufacturers', 12s. 6d. to 14s. 6d. per ton.—Wednesday: The arrival of 66 ships to-day produced more animation in the market, and a considerable amount of business was done, at fully previous prices, for all sorts.—Friday: To-day 101 ships arrived. The supply of house coal was large, and the merchants required some reduction in prices, which the factors refused to concede, consequently the amount of business was small. Hartley's sold freely at nearly previous value; manufacturers' dull, without quotable alteration. Hetton's Wallsend, 18s. 3d.; Hartley's, 15s. 6d. to 16s. 6d.; Tyneside, 18s. 3d.; Gosforth's Wallsend, 16s.; Hartley's, 15s. 6d. to 16s. 6d.; Tanfield's, 13s.; and Holywell Main, 14s. 6d. per ton: 51 cargoes unsold; 55 ships at sea.

CONTRACT FOR COAL.—The Admiralty require a supply of South Wales coal for the use of Her Majesty's vessels at Foyal Roads, under a contract for twelve months certain.

EXPORTS OF COAL.—By the Monthly Circular of Messrs. Laird, we learn that the quantities of coal exported during July was 783,437 tons, against 655,116 tons in the corresponding month of 1860, showing an increase of 128,321 tons. The particulars are:—From the Northern Ports, 467,536 tons; Yorkshire, 19,438 tons; Liverpool, 68,410 tons; Severn Ports, 173,578 tons; and Scotch, 54,475 tons. The increase is from all of the above ports. The total exports from Jan. to July were 4,240,309 tons, against 3,865,213 tons in the same period of 1860, being an increase of 375,096 tons in 1861.

THE IRON TRADE.—The shipments of Scotch pig-iron during the present year, as compared with the corresponding period of 1860, exhibit the following results:—

Month ending January 26 . . . . . Tons 31,619 . . . . . 32,454 1861. February 23 . . . . . 29,738 . . . . . 25,278 " March 30 . . . . . 42,554 . . . . . 46,928 " April 27 . . . . . 62,622 . . . . . 50,585 " May 25 . . . . . 65,637 . . . . . 54,483 " June 29 . . . . . 73,600 . . . . . 52,925 " July 27 . . . . . 48,304 . . . . . 47,846 " Week ending August 3 . . . . . 11,971 . . . . . 10,949 " August 10 . . . . . 10,237 . .

## CLAY CROSS COLLERY ACCIDENT.

AT a MEETING of the INHABITANTS of CHESTERFIELD and the neighbourhood, held in the Municipal Hall, in Chesterfield, on the 9th August, 1861, for the purpose of giving expression to the sympathy felt for the sufferers by the late calamitous inundation at the Clay Cross Colliery, and to make arrangements for a Public Subscription in their behalf,

THE MAYOR OF CHESTERFIELD in the chair,

It was proposed by the Ven. Archdeacon HILL, seconded by Mr. BARROW, and resolved:—

That this meeting desires to express its sympathy with the sufferers by the late calamitous accident at the Clay Cross Colliery, and recognises the duty and obligation of contributing by means of a public subscription to a fund to be raised in aid of the widows, orphans, and families of those whose lives have been lost.

Proposed by Mr. BUSBY, seconded by the Rev. A. POOLE, and resolved:—

That a committee be formed for the purpose of raising and collecting subscriptions, consisting of the following gentlemen, with power to add to their number:—The Mayor of Chesterfield, Mr. Barrow, Mr. Fowler, Mr. Carrington, Mr. R. Coke, Mr. Markham, Mr. Binns, Mr. Turburt, the Ven. Archdeacon Hill, Mr. Cottingham, Mr. Busby, the Rev. Geo. Butt, the Rev. Jos. Oldham, the Rev. A. Poole, the Rev. R. C. Willey, Mr. John Ward, Mr. Woodhouse, Mr. Jeffcock, Mr. Irving, Mr. Bingham, Mr. W. Goodwin, and Mr. S. Denham.

That a subscription list be at once opened and left with the several bankers in Chesterfield and Derby, who shall be requested to receive subscriptions; and that Mr. Geo. Barrow be requested to act as honorary secretary of the committee.

Proposed by the Rev. GEORGE BUTT, seconded by Mr. MARKHAM, and resolved:—

That the distribution and appropriation of the funds collected shall be entrusted to Mr. Turburt, Mr. Milnes, Mr. Binns, Mr. R. Coke, the Rector of Northwinding, and the Rev. Joseph Oldham.

Proposed by Mr. CARRINGTON, seconded by Mr. BINGHAM, and resolved:—

That these resolutions be advertised in the Derby and Chesterfield newspapers.

JOSEPH SHIPTON (Mayor), Chairman.

The Ven. Archdeacon HILL proposed, and Mr. Barrow seconded, a vote of thanks to the Chairman.

The following subscriptions were announced at the meeting:—

The Clay Cross Colliery	£500 0 0
Charles Binns, Esq., Clay Cross	50 0 0
George Vaughan, Esq., Silbstone	25 0 0
Dunston and Barlow Company	25 0 0
Dr. Packman, Tupton Hall	20 0 0
Richard Barrow, Esq., Staveley	50 0 0
The Wingerworth Iron Company	25 0 0
Archdeacon Hill, Hasland	25 0 0
Rev. J. Boyer, Spital House	10 0 0
Mr. Irving, Chesterfield	10 0 0
Mr. Josiah Elliott, Brampton	1 1 0
Charles Markham, Esq., Derby	10 0 0
Richard G. Coke, Esq., Aukerbald	10 0 0
Rev. G. Butt, Chesterfield	5 0 0
The Mayor of Chesterfield	5 0 0
C. S. B. Busby, Esq., Chesterfield	5 0 0
Rev. J. Nodder, Ashover	10 0 0
Wm. Bingham, Chesterfield	10 0 0
Rev. A. T. Rhyfe, Staveley	3 3 0
William Drabble, Esq., Chesterfield	10 10 0
William Clayton, Esq., Chesterfield	5 0 0
SUBSCRIPTIONS SINCE RECEIVED.	
The High Sheriff and Mayor of Derby	5 0 0
Godfrey Heathcote, Esq., Chesterfield	2 0 0
Mrs. Turner, White Lodge	1 0 0
Bucknell and Castle, Chesterfield	1 0 0
Margaret Ellis, Chesterfield	1 0 0
Anna Storrs, Chesterfield	2 0 0
W. P. Thornhill, Esq., M.P.	20 0 0
Rev. J. Oldham, Clay Cross	5 0 0
Mrs. E. Walker, Clay Cross	5 0 0
Messrs. J. and G. Robinson, Chesterfield	20 0 0
James McLean, Esq., Cannock Chase	50 0 0
W. Root, Esq., Chesterfield	5 0 0
Wm. Milnes, Esq., Stubbins Edge	5 0 0
Wm. Milnes, jun., Esq., Stubbins Edge	5 0 0
Rev. A. Poole, Chesterfield	1 1 0
Gladwin Turburt, Esq., Ogston Hall	30 0 0
Crompton, Newton, and Co., Chesterfield	10 0 0
R. B. Barrow, Esq., Synod Hall	10 10 0
The Misses Bookers, Chesterfield	1 0 0
Charles North, Chesterfield	10 0 0
The Sibson Colliery Co. (per G. Vaughan, Esq., Leicestershire)	50 0 0
John Bromley, Esq., Derby	5 0 0
Hewitt and Hane, Chesterfield	2 2 0
The Clay Cross Workmen, including small subscriptions collected in the neighbourhood	180 0 0
Mr. Holdsworth, Clay Cross	10 0 0
Mr. Robinson, Clay Cross	5 0 0
Messrs. Woodhouse and Jeffcock, Derby	21 0 0
The Duke of Devonshire	50 0 0
J. G. Cottingham, Esq., Edensor	5 0 0
A Friend	1 1 0
Mr. G. Binns, Clay Cross	5 5 0
Mrs. Johnson, Somersall	2 0 0
Mr. John Gotherd, Chesterfield	1 1 0
The Proprietors of the <i>Colliery Guardian</i>	1 1 0
Mr. W. Hawkins, Belper	10 10 0
W. J. Wilson, Esq., Clay Cross	5 0 0
Mr. Denton, Clay Cross	1 0 0
Messrs. Hawkins and Sibb, London	1 1 0
Messrs. Stanley and Co., Sheffield	5 0 0
Messrs. Rickett, Smith, and Co., London	21 0 0
Mr. H. Ashmore, Clay Cross	5 0 0
G. N. Browne, Esq., Derby	5 0 0
Jas. Airport, Esq., Derby	5 0 0
M. Kirtley, Esq., Derby	5 0 0
S. Swarbrick, Esq., Derby	3 0 0
Mr. Pettifor, Nottingham	1 0 0
Mr. Roberts, Chesterfield	1 1 0
Fred. Swanwick, Esq., Whittington	20 0 0
Miss Croft, Chesterfield	10 0 0

GEORGE BARROW, Hon. Sec.

Subscriptions will be received by the Mayor of Chesterfield, the Derby and Chesterfield banks, and by the Honorary Secretary.

BELL BROTHERS beg to intimate that, having become SOLE LICENSEES in the United Kingdom of PROF. DEVILLE'S METHOD of PRODUCING PURE ALUMINUM, they are now in a POSITION to SUPPLY, from their works here, both this metal and its compound with copper, known under the name of ALUMINUM BRONZE.—Newcastle-on-Tyne, September, 1860.

DODDS' IRON AND STEEL PATENT LICENSING COMPANY (LIMITED).

This company is PREPARED to GRANT LICENSES on moderate terms for the USE of their PATENT for STEELING RAILS, POINTS, CROSSINGS, MACHINERY, and EVERY DESCRIPTION of IRONWORK.

The process, which is exceedingly reasonable in cost, and gives the most extraordinary durability to the material, has been highly approved of by the following gentlemen, firms, and companies, several of whom have extensively adopted the valuable improvement:—

ROBERT STEPHENSON, Esq.

JOHN BOURNE, Esq.

J. PERRING, Esq.

THOS. E. HARRISON, Esq.

THE GREAT INDIAN PENINSULA RAILWAY COMPANY.

THE NORTH-EASTERN RAILWAY COMPANY.

Messrs. STEPHENSON AND CO.

THE EAST LANCASHIRE RAILWAY COMPANY.

THE GREAT NORTHERN RAILWAY COMPANY.

THE MIDLAND RAILWAY COMPANY.

THE METROPOLITAN RAILWAY COMPANY have ordered a large quantity of rails by this process.

The FOLLOWING FIRMS are PREPARED to EXECUTE ORDERS under the company's patent:—

Messrs. S. BEALE AND CO., PARK GATE, ROTHERHAM.

Messrs. DODDS AND SON, ROTHERHAM.

Messrs. LOSH, WILSON, AND BELL, NEWCASTLE-ON-TYNE.

THE EBBW VALE COMPANY, SOUTH WALES.

Messrs. LEVICK AND SIMPSON, NEWPORT, MONMOUTHSHIRE.

Messrs. LLOYD, FOSTERS, AND CO., WEDNESBURY.

THE ISCA FOUNDRY COMPANY, NEWPORT, MONMOUTHSHIRE.

Applications for Licenses can be made to R. COOKE, Esq., at the company's offices, No. 7, Saxe-lane, London, E.C., where also testimonials and other information may be obtained.

THE LONDON AND PROVINCIAL AGRICULTURAL COMPANY (LIMITED).

(REGISTERED).

CHIEF OFFICES AND DEPOT, —40, MARK LANE, LONDON.

ALBERT WORKS, STRANGEWAYS, MANCHESTER.

This company, having obtained the established business of the late Messrs. Thomas Retigan and Co. on most benificent terms, will be PREPARED to SUPPLY, on and after the 1st of September:—

THE ROYAL PATENT CAKE FOR CATTLE, at £12 10 0 per ton.

THE COMPOUND FEEDING MEAL, at 15 15 0 per ton.

THE ORIGINAL ECONOMIC FOOD FOR CATTLE, at 1 10 0 p. cwt.

And FIRST-CLASS MANURES at ADVANTAGEOUS PRICES.

These celebrated and reliable productions will be manufactured on an extended scale by this company, at the above reduced and legitimate prices; and the public are confidently invited to participate in the lucrative return that must inevitably be rendered from the increasing operations of a business which is already established, highly profitable, and partially patented.

Shares, £1 each; 10s. payable on allotment; for which immediate application is requested, as the list will cease shortly.

Full particulars, prospectuses, and share application forms may be had from the company's agents in each district; the bankers, the London and County Bank, Threadneedle-street, London; the auditors, Messrs. COOPER, BROTHERS, and Co., 13, George-street, Mansion House, London; the brokers, F. EVERETT, Esq., 17 and 18, Royal Exchange, London; and W. POUNTNEY, Esq., Royal Exchange, Manchester; and from the secretary, at the offices.

\* Applications for agencies in unrepresented districts will be entertained.

## THE PROGRESS OF MINING IN 1860, BEING THE SEVENTEENTH ANNUAL REVIEW.

BY J. Y. WATSON, F.G.S., Author of the *Compendium of British Mining* (published in 1843), *Gleanings among Mines and Miners*, &c.

The SIXTEENTH ANNUAL REVIEW OF MINING PROGRESS appears in the MINING JOURNAL of December 31, 1859, and January 7, 1860.

A FEW COPIES of the REVIEW OF 1855, containing Statistics of the Metal Trade, the Dividends and Percentage Paid by British and Foreign Mining Companies, and the State and Prospects of upwards of 200 Mines. Also a FEW COPIES of the REVIEW OF 1852, 1853, and 1854, MAY BE HAD on application at Messrs. WATSON and CUELL's Mining offices, 1, St. Michael's-alley, Cornhill, London.

Also, STATISTICS OF THE MINING INTEREST. By W. H. CUELL.

Now ready, price 1s.

WATSON AND CUELL'S MINING CIRCULAR, published every Thursday morning, price 6d. or £1 1s. per annum, contains Special Reports of Mines, and the Latest Intelligence from the Mining Districts, from an exclusive resident agent; also, Special Recommendations and Advice upon all subjects connected with Mining, and interesting to Investors and Speculators. A Record of Daily Transactions in the Share Market, Metal Sales, and General Share Lists, &c. Edited by J. Y. WATSON, F.G.S., and published by WATSON and CUELL, 1, St. Michael's-alley, Cornhill.

N.B. Messrs. WATSON and CUELL have made a selection of a few dividend and progressive mines, which they have reason to believe will pay good interest, with a probable alloy, also, of a rise in value, the names and particulars of which will be furnished on application.

INVESTMENTS IN BRITISH MINES.

Mr. MURCHISON'S REVIEW OF BRITISH MINING for the QUARTER ENDING 30TH MARCH, 1861, with Particulars of the Principal Dividend and Progressive Mines, Table of the Dividends Paid in the last Five Years, &c., is NOW READY.

Price One Shilling. At 117, Bishopsgate-street Within, London, E.C.

Reliable information and advice will at any time be given on application.

Also, COPIES of "BRITISH MINES CONSIDERED AS AN INVESTMENT." By J. H. MURCHISON, Esq., F.G.S., F.S.S. Pp. 356, boards, price 3s. 6d., by post 4s. See advertisement in another column.

cause of changing hands, and not a supposed energy at the mine inducing parties to buy. It is so very desirable to promote *long* side investments in good mines, of which there are so many in Ireland, that I regret to observe, as in this instance, statements made that would not, I have reason to believe, be corroborated by an impartial investigation by disinterested parties.—A MINING SPECULATOR: *Dublin*.

GREAT WHEAL ALFRED.—Mr. Kevern is too personal in his comments on Mr. Hollow: any remarks on the general business of the company are admissible; but individual censure can effect no useful purpose by publication in the Journal, or, indeed, serve any beneficial object in the present state of the company's affairs.

NORTH WALES SLATE QUARRIES.—A letter has been forwarded to "Cymro."

CHICHESTER SLATE COMPANY.—We have received several letters respecting the position and prospects of this undertaking. We hesitate to publish the complaints of dissatisfied shareholders, but should recommend that the works be examined by some independent and competent agent, for whose report we shall readily afford space for the information of the shareholders generally.

ANTIMONY.—I shall feel much obliged if you or some of your correspondents can give me any information respecting the various uses to which antimony is put, and in what branches of manufacture it is principally employed? Whether the quantity consumed in this country is sufficiently large to make the importation of it a regular branch of commerce? Whence comes the chief supply, and the average price it commands in the market?—E. J. B.

THE MINING JOURNAL  
Railway and Commercial Gazette.

LONDON, AUGUST 24, 1861.

Perhaps on no subject has there been more discussion and difference of opinion than on the classification and mode of arrangement of objects to be exhibited in the International building next year. In the proposal first made by the Society of Arts to Her Majesty's Commissioners of 1851, in December, 1850, the Council submitted that in their opinion the objects exhibited should be "arranged according to classes, and not countries." To this proposal exception has been very generally taken, especially by Foreign Countries and Colonies, which very naturally desire to make the best collective and distinctive appearance they can, so that their individuality may not be lost sight of, nor the extent of their contributions lessened by diffusion. The exclusive arrangement in classes would be very well for Britain, France, and other large manufacturing nations, but is not at all suited to young countries, whose special object of exhibiting is to make known the extent, variety, and nature of their resources. But in this competitive age, when comparisons have to be drawn in order to arrive at the merit value of a producer manufacture, it is highly desirable that, wherever possible, specimens should be compared side by side; and, without interfering with the completeness of the special collections of countries or districts, this may yet, we think, to some extent be done.

The Exhibition of 1862 will be a more important one than that of 1851, for Great Britain will have to exhibit against the manufacturing industry of the whole world, the products of so many countries having now been opened up to us in consequence of the remission of duties on manufactures. But there are some even now of our manufacturers who are so blind to their own interests as to fancy that they can keep aloof, and increase their business and elevate their position and reputation by sneering at the undertaking, and putting the invariable *cui bono*, which is so unanswerable an appeal of small minds. Thus, a Mr. J. S. WRIGHT, speaking at a public meeting convened at Birmingham in March last, "considered the Exhibitions of 1851 and 1855 enough for one generation, and should like to have

rival, so that the judges, whether jurors or the public, may have every facility offered them for forming a correct judgment, and not have their memories unjustly taxed in carrying from place to place the qualities of each object under examination. Those who exhibit for the advancement of Science, and we are happy to find among them some of the largest manufacturers of this district, would without hesitation lend their aid to any arrangement which would facilitate an easy reference for educational purposes to the various classes, and thus assist in the object they have in view. From the remarks made on the last Exhibition, and from the general wish in the public mind to be instructed as well as amused, we think that the universal opinion would be in favour of some classified arrangement."

Systematic and orderly grouping, fairly carried out in detail, are most desirable. The points urged by Prof. ANSTED, in his paper read before the Society of Arts in March last, were the absolute necessity of real order in the grouping or display of products, and that great facility of comparison should be one of the characteristics of the method of arrangement adopted. There was no department, he urged, in which definite order and plan are more necessary for a fit exhibition of the resources of our own and other countries, and a proper comparison of them, than that of minerals and mineral manufactures. The principle of separating the bulky, more common and less costly articles of mineral origin or manufacture, from those which are comparatively small in the quantity obtained, valuable in proportion to their bulk, rare in their distribution, and costly in their preparation and use; that raw materials should form, in most cases, the fundamental objects in series illustrating manufacture, and for other uses; and that all the collections of minerals and mineral manufactures from different countries and districts should be placed where they can most conveniently be compared with similar objects. In the last Exhibition there was little unity of expression and great confusion in the arrangements, arising, in some measure, from want of previous knowledge and proper supervision, great haste arising from the late period at which many of the articles arrived, and want of proper allotment and arrangement of space. Thus parts of the English collections were in the south-west corner, in the nave, in some bays in the northern side of the building, and some outside. The subdivisions in the different countries were by no means the same, and in many cases no grouping at all was attempted. The importance of the exhibited manufactures being in all cases accompanied by and illustrating the raw material of which they are formed, no one can doubt, and any general arrangement by which such combination can be accomplished would be highly beneficial and interesting. Prof. ANSTED admits the advantage of obtaining the services of exhibitors to arrange for themselves, and to elect for themselves where their collections shall appear; but this is by no means inconsistent with the establishment of a system by which the framework of arrangement is so far secured that the exhibitor can hardly fail to put himself in the right place. Without this days may be wasted in the vain attempt to compare the similar manufactures of different exhibitors, or obtain an idea on any subject that may lead to useful results.

Baron STENBEIL, the Royal Commissioner for Wurtemberg to the last Exhibitions of London, Paris, and Munich, in a very practical communication to the Society of Arts, recommends that each country should be bound to take up as much as possible the whole breadth of the building, and to adhere to the prescribed order of succession of classes from the right hand to the left; then everyone in walking in the direction of the length of the building will be able to trace out the kindred articles, and in walking in the direction of its breadth to follow after the products of the several countries. Much the same principle was adopted in the arrangement of the Exhibition of 1851, and if this should be carried out more completely the Exhibition of 1862 will offer all the requisites which, from such a display of industrial products of all nations, can fairly be expected.

We have no desire to advocate or urge forward any particular system of classification or arrangement, whether that of Professor ANSTED or any other, but merely desire to see the subject more generally taken up and discussed, as respects British producers and exhibitors at least. All we wish for is to find the great bulk of the articles—raw materials at all events—so arranged that a producer, manufacturer, member of the press, or any other individual who wishes to collect information in any particular department, may be enabled to do so with facility, and not be obliged to walk miles and wade through volumes of catalogues in the vain attempt to bring together in the mind similar objects, so widely distributed as they were in the Exhibition of 1851.

The arrangements with regard to the classification of the materials to be exhibited at the forthcoming International Exhibition, and belonging to the department which comprises Mining, Quarrying, Metallurgy, and Mineral Products, are progressing as speedily as possible, and as it is finally decided that all applications for space must be made before Oct. 1, it may be well to refer to a circular which will be shortly issued by Mr. F. R. SANDFORD, the secretary to the Commissioners. The committee for the class with which our readers are most intimately concerned have drawn up a scheme, with a view of suggesting to some extent the nature of the objects which it is thought desirable should be exhibited.

It is proposed to represent Mining and Quarrying operations by the exhibition of drawings and sections, showing the relations of the minerals to the rocks in which they occur; plans and sections and models of the workings of mines and collieries; models or drawings of machinery employed for ventilation, draining, raising minerals, lowering and raising miners, stamping and crushing ores, and washing and dressing ores; and tools and other appliances. Geological and mineralogical maps, plans, sections, or models, are also thought desirable.

The non-metalliferous minerals will be represented by coal and minerals used as fuel (comprising bituminous coal, Cannel coal, and Torbanite, anthracite, lignite, peat, bituminous shales, native naphtha, pitch, bitumen, &c.); clays and felspathic minerals (comprising porcelain clay or kaolin, china stone, potters' clay, pipe-clay, brick clay and brick earth, &c.); building stones of all varieties; slates and slabs; paving stones, &c.; sands for glass-making, &c.; cement stones and cements, limestones, &c.; rotten stone; fullers' earth; fluor-spar; barytes, strontian, and other minerals employed in the arts; coprolites and other mineral manures; salt; gems; stones used for ornament; millstones, grindstones, honestones, &c.

Amongst the metalliferous minerals will be found the various ores of iron, including magnetic oxide, hematite (anhydrous red oxide), specular iron ore, brown hematite (hydrated oxide), spathose ore, hydrated oxides, carbonates (argillaceous carbonate, blackband, hydrated oxides of the carboniferous formations), coal brasses of coal measures of South Wales, mixed carbonates and oxidized oxides; and pisolithic iron ores; of copper, including native, oxide, carbonate, sulphides (grey ore, yellow ore, &c.), and other varieties which enter into commerce; of tin, including oxide, pyrites; of lead, including carbonates, sulphides, and other varieties used in the arts; of silver, including native, sulphides, chlorides, and argeniferous gossans, &c.—it is especially important that attention should be directed to these; of gold, including gold quartz; of zinc, including carbonate, sulphide; and of sulphur ores (pyrites of metalliferous veins, ditto, of coal measures—"coal brasses"), as well as those of cobalt, nickel, uranium, tungsten (wolfram), arsenic, and manganese. As to metallurgy, it is desirable that models of furnaces, and examples showing the several stages of the particular processes, with illustrations of the varieties of the metals known in commerce, should be exhibited.

The committee state, and we believe that the statement will be very generally concurred with, that it is in the highest degree important that the great mineral interests of this country should be fully represented. This can only be done by individual exertion, guided by unity of action, and this impression has induced the committee to submit for consideration an outline plan, in which they indicate such varieties of commercial minerals as they believe may be advantageously exhibited. They leave the filling in of this design to the judgment of intending exhibitors, upon whom they rely for devising the most perfect methods of representing their own industries. The committee, however, suggest the desirability of keeping the size of mineral specimens within moderate limits, as being more convenient for display, and better adapted for exhibiting special peculiarities, than unwieldy masses. This does not, of course, apply to any remarkable examples, such as sections of lodes, or peculiar and illustrative phenomena. They also recommend that, where building stones are exhibited in the form of cubes, the uniform size of 8 inches should be preserved, and it is deemed essential that two surfaces of the cube should be left in the natural state—undressed. These and all mineral specimens should have labels attached, carefully giving the locality from which they were obtained, and, if possible, the geological formation to which they belong.

The committee desire to see models or drawings of the most approved methods adopted in working our mines and collieries, of the machinery employed for draining, for ventilation, and for winding, and also of the

improvements which have been introduced for preparing minerals for the market. They also hope to see good illustrations of the metallurgical processes employed, and of the commercial results obtained.

#### APPLICATION OF EXCAVATING MACHINERY TO MINING.

All the world were incredulous when Stephenson offered to construct an engine that should travel at the rate of 20 miles an hour; and a prominent Member, of admitted ability, in our House of Lords stated that "he would eat the first steamer that ever crossed the Atlantic." The results we know; but these simple facts seem to dwindle into insignificance in the face of the prodigies of progressive skill now displayed daily in science, engineering, and mechanism. We wait out thoughts in the form of telegrams over the face of the earth; we travel at such a speed as our ancestors never dreamt of; but we now live in such times that the accomplishment of any object which hitherto has appeared impracticable merely induces us to exclaim, "We wonder it has never been done before!" To our material minds we only seem to realise the value of an invention when once adopted, as we come to consider what our position would be if there were a probability of our being deprived of the use of it; but, nevertheless, we cannot but feel sensible of the benefits conferred on mankind by the substitution of machinery for manual labour.

It is, therefore, with a sense of performing a pleasurable duty that we direct particular attention to a new invention, referred to in a letter to be found amongst our Correspondence, headed "A New Era in Mining," and written by a gentleman who has had a life-long mining experience; and we hail with satisfaction the accomplishment of an object hitherto regarded with a notion of its impracticability, on account of some stubborn engineering and mechanical difficulties which had to be contended with. These have been overcome, and we have no hesitation in expressing our conviction that its success will work a thorough revolution in the whole system of mining. By providing the power of calculating the time and cost to explore a certain depth and extent of ground, speculation in mining will be assimilated to commercial pursuits, with this unmistakable advantage—that when the ground has been once carefully and judiciously selected, and operations properly and systematically carried out for its development, there would be far less chance of unsatisfactory results than are met with by merchants and manufacturers in the usual routine of their business. As this important invention must beneficially interest the landowners, mine proprietors, merchants, and miners, we opine that it will meet with immediate adoption.

**THE CLAY CROSS COLLIERY ACCIDENT.**—The steps taken by the inhabitants of Chesterfield and the neighbourhood for collecting subscriptions in aid of the widows, orphans, and families of the sufferers by the recent calamity at Clay Cross has, we are glad to find, been attended with much success—the first list, a copy of which will be found in our advertising columns, showing that subscriptions to the amount of 1428*l.* 2*s.* have already been received. At the public meeting at Chesterfield, on Aug. 9, over which the Mayor of Chesterfield presided, Mr. George Barrow was requested to act as honorary secretary, and trustees and a committee for distributing the funds were appointed. Subscriptions may be forwarded to the Mayor (Mr. Shipton), to any of the Derby or Chesterfield bankers, or to the honorary secretary.

**COMPRESSED FUEL.**—Mr. A. G. Lasserre, Bordeaux, has patented an invention for compressing peat, or small or waste coal, coke, and anthracite. The matters to be agglomerated are first heated in an oven, and mixed with a small proportion of pitch, tar, or resin, the mixing being effected by the aid of a shaft furnished with arms or bars placed within the oven. They are then formed into balls or blocks. A wheel is provided with 28 holes, made to receive a similar number of pistons, so fitted as to play freely. This wheel receives circular motion by means of toothed gearing. The material to be agglomerated runs continually through a hopper, aided by a butterfly-wheel, and fills the cavity between the two opposite pistons, which are to compress it. The wheel in its rotation carries with it the material and the pistons, which carry at their extremities rollers, which pressing against inclined planes force the pistons to come in contact, so that the materials lodged in the hollow spaces at the end of the pistons is compressed between them. After the pressure has been exercised, the axles of the rollers come against cams, when the pistons retire, and the ball or block falls. To avoid adherence of the ball to the sides of the piston-spaces a second piston inside the first exerts (as the pistons begin to separate) a pressure, which completely isolates the ball from the other pistons. The material may be raised to the hopper by any mechanical means. A pump may be placed so as to inject water into the pistons, to wash their interior, detaching matter that might otherwise remain, and preventing the balls, lumps, or masses from sticking together. When this fuel is intended to heat apartments or for domestic purposes, Mr. Lasserre proposes simply to steep the matter in a bath of argillaceous water, to avoid the disagreeable smell of the gas contained in the coal, tar, pitch, or resin. The agglomeration will be effected as readily, and in combustion the fuel will be almost smokeless.

**PUDDLED STEEL.**—The Institution of Mechanical Engineers have held their meeting. Elaborate papers have been read on cast-steel, Bessemer steel, and the effect of carbon in combination with iron, but not one single allusion has been made to that process which supplies the greater part of the mechanical industry of this country with their steel,—that process known and worked abroad long before it excited any attention at home, and even at this time superseding and replacing cast-steel for most important practical uses, and even if not used in England by English firms for such uses, still it is brought from France and Germany, and is in use equally the same. What is puddled steel? Mr. Fairbairn says—"Puddled cast-iron—the process of decarbonization being stopped before all the carbon has been eliminated." At Rive-de-Gier, France (Petin, Gaudet, and Co.), the mixtures for puddled steel vary with the uses for which it is required. It (to a certain extent) supersedes cast-steel for cutlery, side-arms, inferior tool steel, crinoline steel, and spring steel; and at St. Léon, Bordeaux, Messrs. James Jackson, Son, and Co. manufacture not only the articles named by the above-mentioned firm, but have immense orders on hand for railway carriage springs, which are unsurpassed, and can compete with our own manufactures in England. We hear of Mr. Clay, the Mersey Steel Works, and Firth's puddled steel; but why all this secrecy? Is there no puddled steel manufactured in Sheffield, and why is it not made known? We cannot for a moment believe we are behind any one country in the world in steel manufactures, and yet the complete ignorance of this branch of manufacture would lead us to believe so. Let us see why this is. It is no secret that scarcely two pigs of iron run from a furnace will be precisely similar on analysis; and as several qualities or mixtures are used in making puddled steel, so is there a difficulty in obtaining a uniformity of quality, and this often deters manufacturers from following up this remunerative branch of manufacture. For no one can deny that puddled steel is cheaper than any other, at least at the present time. Its uses are multifarious, and it only requires the aid of the chemist, and a little careful attention, to bring it to perfection. About 50 per cent. of grey malleable pig-iron, 40 per cent. of white iron, about 15 per cent. of manganese pyrenean, or Prussian spiegeleisen, with 5 per cent. of manganese and salt, compose a mixture which will produce a steel fit for almost any purpose, and at a reasonable rate, whilst those puddled steels in repute in England at the present moment reach to almost the price of cast-steel. Seeing, then, that steel of a uniform quality can be made elsewhere for any purpose, and at moderate rates, we would earnestly direct the attention of our steel manufacturers to this much-neglected branch of industry.

**IMPROVED REGULATING VALVE.**—An improved apparatus for regulating the flow of gas, which has for its object the equalisation of the pressure of gas as it flows from the gasholder to the burners, and which will be found more particularly applicable when employed to regulate the flow of gas under heavy pressure, such as when portable or compressed gas is used for illuminating purposes, has been invented by Mr. D. H. Williams, of Pittsburg, U.S. The gas under pressure is conducted from the gasholder by means of a pipe provided with a peculiarly formed cock or valve to a chamber, from whence, when the pressure is diminished to the proper amount, the gas passes through another aperture of pipe to the burners. The cock or valve which regulates the admission of the gas to the chamber is constructed on the rotary principle; it is made of a conical form, and, of course, is fitted to a seat of corresponding form. A passage is made along the axis of the cock to the centre, where it meets with a transverse passage, which conducts the gas in opposite directions to a chamber made outside the cock in the seat. Another transverse passage is made in the cock parallel to the former, and communicates with an exit passage, also in line with the axis of the cock and with the entrance passage above mentioned. By this means the gas is made to press upon both sides of the cock alike, and, consequently, a balance of pressure on the cock is obtained. The seat of the cock is made movable thereon, and is connected by a lever or arm and a rod with a spring box or elastic medium, which is adjusted to a given pressure. Upon gas being admitted through the

regulating cock or valve into the chamber, the pressure being exerted upon the elastic sides of the spring box, the latter will be collapsed thereby, and will, consequently, tend to close, either wholly or partially, the entrance valve or cock until the pressure is reduced, when the elasticity of the spring box will again open the valve and allow the gas to flow in. The interior of the spring box communicates with the external atmosphere by means of a tube, which passes through a stuffing-box to prevent the gas from escaping from the chamber. An adjusting screw is adapted to the tube of the spring box, so that the apparatus may be regulated to allow the gas to pass through at a given pressure. He prefers to construct the spring box or the elastic medium thus:—The discs of which the box is made are constructed of thin sheet-brass, which is wound-up in a convolute coil, and covered over with some elastic air-tight substance. The discs are slightly hollowed out and soldered together at their edges. The valve is placed on the supply-pipe, between the gasholder and the regulator.

#### REPORT ON CORNWALL AND DEVONSHIRE.

[FROM OUR CORRESPONDENT IN TRURO.]

**AV. 21.**—Copper mining has been sadly going back in West Cornwall for some time past. The old mines have been steadily deteriorating, and for a considerable time no new ones have been sprung up to supply their places. The copper mines of the eastern part of the county are getting far ahead of those of the west; and, instead of there being no copper "east of Truro Bridge"—the old mining notion—it would almost appear as if the converse of that proposition was not unlikely to become the more correct. The old copper mines must, sooner or later, come to an end, and other discoveries of that metal are not made the western division will soon be relying almost wholly upon tin. The advent of a new copper mine to the Dividend List is, therefore, a matter of some importance. North Downs has this week commenced dividends, which, judging from the reports, and the general good prospects of the mine, are likely to be continued for some considerable time at least. The account meeting of this mine was also particularly characterised by the presence of a large number of shareholders from Liskeard, in which town a large interest is held. The Liskeard people have been very lucky of late years, their district being now the best copper district in the kingdom; and, in the case of North Downs, it would seem as if they had brought some of their luck west with them. It is to be hoped that this will induce them to venture further in the western division, for it is not easy now to find another such body—so influential both in character and wealth—who hold so well together, and who, altogether, are so well able effectually to promote the interests of any concern, or of any district, which they take in hand. It must have been very satisfactory to Mr. Pryor and Mr. Dunsford to have received such flattering testimony of the value of their exertions in working North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course, which separated it from and forms the boundary between it and Briggan Mine. The lodes now working on are, no doubt, the Briggan lodes, but the North Downs sett also includes the old Wheal Peever Mine, to the south, which has the North Downs and Wheal Rose lodes. Wheal Peever is not now working, but it is a piece of ground which will be some day available for the North Downs shareholders, when the working of North Downs up to its present position, from gentlemen so well capable of judging as the Liskeard adventurers. North Downs is not the ground formerly worked under that name, which lies on the other (east) side of the great county cross-course, and is now included in North Downs and Wheal Rose sett. North Downs lies on the west side of the county cross-course,

but have presented no point of interest. Several decrees have been made against mines, but they were mostly unopposed. An application was again made by Mr. George Goodridge, of Park-street, Regent's-park, London, the holder of 24 1-23,720 shares in Wheal Vor, to inspect the books, &c. At the former sittings Mr. Goodridge made a similar application, which was refused. The present application seems to have been made upon grounds which professed to be different, but it received no more favour from the Vice-Warden, who again refused it; so that Mr. Goodridge's spirit of enquiry is nipp'd in the bud, and he will have to be content to leave his interest in Wheal Vor—1-10,000th part of the mine seems to be the nearest fraction capable of expressing it generally—to the care of Mr. Noakes and the committee. In such cases costs are not usually granted, which is rather hard in a case of this kind, where Mr. Noakes had to come from London to oppose the application. His Honour seems to see this, and has intimated that, in future cases, he may find it necessary to make some condition as to costs where applications of the kind are made on such slight grounds as seems to have been the case on the present occasion. So that shareholders of an enquiring spirit, holding 1-10,000th part of a mine, must be in future a little careful, or they may find themselves let in for very serious costs.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

NEWPORT, CARDIFF, AND SWANSEA, AUG. 22.—The Coal Trade generally is in an active condition, and the exports for the past three months show a considerable increase over the previous three months. Much has been said about the slackness of trade in connection with the two staple commodities of the district, but, so far as the coal trade is concerned, the exports for the past three months prove that it has hardly felt the general depression which has closed so many furnaces, and thrown so many thousands out of employ.

There is little new to report in reference to the Iron Trade, but, as far as may be judged from indications, better times are evidently near. Last week the Aberdare Iron Company put a monster furnace under blast, and they have two others of a similar size nearly ready to undergo the same operation. The Rock Colliery, Blackwood, the property of Mr. D. Thomas, Cefnycerib, is now in full operation. The colliery is worked by a gant, and the produce amounts to about 60 tons per day. The coal is shipped principally at Newport. Mr. Thomas has also made a contract to supply the South Wales Coal Company with 1250 tons of Cefnycerib coal per month for the next three years.

Mr. Evans, the Government Inspector of Coal Mines for South Wales, has just instituted proceedings against Messrs. Morgan and Perkins, the owners of the Lynch Colliery, Gower, for violation of the Mines Regulation Act, by which two men were recently killed.—On Saturday last a lad named John Lewis, 15 years of age, who was employed in the Gelly pit, near St. David's, Llanelli, got on one of the trams which was loaded with coal, and was at the time descending the incline. The unfortunate lad in some way got jammed between the coal and a low part of the roof. His screams brought some men to his assistance, when he was extricated from his perilous position and carried to his home at Llangennech. His collar bone was split, and he was much bruised, but he is progressing favourably under the care of Mr. Thomas, surgeon.

The Rhondda Valley has now become one of the most important districts in South Wales. The pits throughout the valley have yielded enormous profits to the proprietors, and sinking is still continued with considerable activity. The Messrs. Jones have just won the No. 2 vein, at Coedca Colliery, and they have commenced sinking to the No. 3 vein. The Dinas and Cymmer Collieries are in full work, and there is every prospect of things continuing in their present buoyant state.

A turn-out has taken place at Abercarnie, in consequence of the men demanding an increase of prices. This is rather a strange demand in these times of depression and short work, and it is quite evident that the act of the men will recoil upon themselves, to their great disadvantage. The success of the Blaenau colliers seems to have been the chief cause of the strike at Abercarnie, the men at the latter place claiming that they ought to receive the same prices as the workmen at Blaenau. We understand that a considerable number have resumed work, although the majority still hold out.

The adjourned meeting of the Risca Relief Fund Committee was held at the Town Hall, Newport, on Tuesday last, the Rev. Augustus Morgan occupied the chair, and there were also present Messrs. Lionel Brough, Government Inspector of Mines; D. Morris, Blaenau; John Evans, Risca; Thomas Phillips, Inn, Risca; C. B. Fox, Newport; Rev. Howell Williams, &c. The accounts were examined and adopted, and several fresh apportionments were placed on the list for relief. It was suggested that the present weekly allowance to the widows and children be increased, but no definite resolution was come to on the point.

A difficulty has presented itself in reference to the working of the Langan Silver-Lead Mine, Bridgend. In previous number of the *Mining Journal* it was stated that Mr. John Robson and Mr. Humby were about commencing to work the mine. Since then notices have been served on each of these gentlemen, as well as upon their solicitor, Mr. J. Morgan, by Mr. J. Kessel, who holds a lease of the mine from a gentleman in the neighbourhood, and who will not give up his interest until he is reimbursed the outlay he has made upon the works. It is to be regretted that a proper understanding is not arrived at, for there can be no doubt but that the mine would eventually be a paying one to the proprietors, and it would afford employment to a great number of hands.

The Newport and Cardiff shipping trade remains about the same. Coasting freights are higher at Newport. A large number of vessels have arrived at the Penrhyn Roads, and this it is expected will influence the upward tendency of the freight market.

**THE RISCA EXPLOSION.**—William Derrick, who was an underground officer at the Black Vein Pit previous to the late calamitous explosion, and a witness on the inquest, has forwarded us a letter, in which he complains that certain statements made by him, and which he maintains are true, have deprived him of employment and of the means of support for his family. His letter is accompanied by assertions of a very reflective character upon his superior officers, and which contains a long series of comparative statements of circumstances as they were stated to have existed at the time of the explosion, and those which Derrick contends really did exist. One very serious accusation is, that the evidence given that before the explosion there was no danger on the doors was false, and that, after the explosion the wind was turned up Beddington's deep, along the first east level, up No. 4, and back to the ventilator—the result being that the pressure was immediately taken off the doors, and the Government Inspectors led to believe that the roads must have been in excellent condition before the explosion. We shall be glad to forward the document to the Inspectors or the coroner, should they desire it, or think it might be useful.

#### REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

AUG. 22.—We are not enabled at present to announce any improvement in the position of the Iron Trade in these counties, though there are several large houses in Yorkshire who have received a better supply of orders from the Continent. The home demand is light, and the rates obtained for merchant iron are such as to leave scarcely a remunerative profit upon the majority of transactions. There is a prevalent impression that the rates for labour will have to be modified until a resumption of active business should result, and in respect to this matter several large establishments have reduced the wages paid to the men. The pig-iron trade is dull, and altogether the position of the trade is exceedingly unsatisfactory, more especially as regards the trade with America.

The Coal Trade is comparatively active, considering the season of the year, and the depression existing amongst the manufacturing industries of the country. Mr. Morton, Inspector of Coal Mines, reports that above 8,500,000 tons of coal were drawn in Yorkshire last year, and happily the number of persons killed at the collieries was but fifty, or one death for every 170,000 tons raised. This is the smallest actual number of deaths in any one of the last ten years, although in that period the number of collieries has increased from 280 to about 400. Yorkshire contrasts very favourably with the average of the whole kingdom in regard to these accidents, but the Inspector has to report that nearly all the fourteen deaths ascribed to explosive gas might have been prevented by locked safety-lamps, properly and fairly used, and that many of the other deaths were preventable, and might have been avoided by the exercise of reasonable vigilance, common prudence, and ordinary skill.

The subscriptions in aid of the sufferers by the late calamity at Clay Cross are making satisfactory progress, and now no doubt remains that all who have suffered by that fearful accident will be permanently provided for in a pecuniary point of view. The Duke of Devonshire has subscribed 50/-, and, indeed, the appeal has elicited the sympathy of all classes. The company have always been distinguished for liberal management, and notwithstanding the most searching investigation of the coroner and jury, they have been held perfectly blameless. The committee who are to have the appropriation of the fund are gentlemen of the highest standing in society, and it must be a source of great gratification to the company to find that all the neighbouring coalowners have subscribed to the fund, clearly demonstrating the esteem in which they are held by their neighbours.

The position of the Derbyshire lead mines is somewhat duller and less hopeful than was the case a short time ago. The Mill Town Company have abandoned the old shaft, and are sinking a new one. The North Derbyshire Company have temporarily ceased the sinking of the shaft, and the Cawdor Mining Company, at Matlock, have set down the mine, and are taking up the plant. There appears to be a paucity of mineral enterprise just now, which may be mainly owing to the depression in trade, and particularly in the trade of Sheffield, from which Derbyshire lead mining has received great support.

The Mill Dam Company, on the 9th inst., measured 73 loads of ore, which would weigh from 17 to 18 tons, the produce of six weeks, their previous measure having been made on June 28. Although the weather during the last six weeks has been very favourable for mining in the Peak, and there are from 60 to 70 men and boys employed at the mine, the quantity of ore got scarcely averages 3 tons per week. Some of the shareholders continue to express their surprise at the last call of 5s. per share having been necessary, but if they will only calculate the amount required to meet the wages of so large a body of workmen, in addition to the bills for coal, powder, timber, and other charges attending the reparation, and renewing of the machinery and tools, they must see they have no reason to be surprised, considering the small quantity of ore the mine yields, which is also subject to the payment of the royalty and mineral dues. There is more reason for the comments made upon the inaccuracy of the quotations in the share list published in the local papers, where the paid-up capital on the shares in this company continues to be stated at 5s. per share only, although the call of 5s. per share ordered to be paid in June last raised it to 3s. per share.

Derbyshire bids fair to rival Staffordshire in the manufacture of ornamental tiles for floors. A manufactory has been commenced at Ashover, and though at present conducted on a small scale, it will in the course of a short time become extensive. It has been found that a very handsome and durable tile can be made at a cheap rate, and we

feel confident these tiles will, for all practical purposes, prove equal to Minton's, whilst they will be materially cheaper in cost.

The new coal company, which was alluded to a short time ago as being formed at Sheepbridge, is not making much progress in a public way, whatever may be doing privately. We hope it will not share the fate of its predecessor—"the Whittington Coal Company," for which a large amount of capital was subscribed, but it fell through, owing to some misunderstanding amongst its promoters. We heard it said that the sharks were too numerous, and that they battled about the prey, in the midst of which the great prospectus was swallowed, and the company came to a mysterious end.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

AUG. 22.—The Iron Trade continues to present indications of the slight improvement previously described, which, however, must not be taken to extend further than a trifling increase in the orders, partly arising from the better prospect which the crops have presented during the last few weeks, and to the general necessity for purchasers to replenish stocks. There is a slight mitigation in the dullness long existing, but the change would be considerable from the present to a state of fair activity. Pig-iron is quite as firmly held as it was, and some sales are taking place; there is, however, no indication of any probable advance for the present.

The Coal Trade is extremely flat over the whole of the country. The great extent to which the blowing-out of blast-furnaces has proceeded, with the consequent reduction in the make of finished iron and of the consumption of coal in both cases, naturally produces this result; but the consumption of coals for other manufactures and for domestic use is also very large, and the general depression of trade reduces the demand on these accounts, as the manufacturers do not require so much, and the poor are compelled to stint themselves in fuel as well as in other comforts. At a very large proportion of the collieries of South Staffordshire the men are not working more than three days per week. At the Brownhills Collieries, on Cannock Chase, the reduction of wages, which has been elsewhere accorded to, is resisted. In the Hardware Trades a degree of improvement is reported, but this arises mainly from foreign orders, which keep up fairly. The better prospects of the harvest, and the lower rates of discount, are operating favourably, but the manufacturers are still very short of orders, and the men, especially in the lock trade, are compelled to be content with only a portion of a week's work. As stocks have been increased, in order that the workmen might be kept together, some time must elapse before these trades become active.

The success of local wagon companies has been repeatedly noticed in the *Mining Journal*, and another illustration was afforded by the report of the Midland Wagon Company, presented to the sixteenth half-yearly meeting, on Wednesday, at the offices, Birmingham. Mr. W. Owen, Chairman of the board of directors, presided. The revenue for the half-year was 20,744/-, against 18,328/- for the six months immediately preceding. After paying a dividend on the whole of the stock of the company, at the rate of 10 per cent, per annum, a considerable balance remained. The wagon stock had increased to 3976, and the whole of the 6 per cent, debenture stock had been repaid, and except the sum of 900/-, held at 5½ per cent., the whole amount of money on debentures was now held at 5 per cent. The success of these wagon companies is in every respect gratifying; and amongst the advantages which may be hoped from such associations is the more economical management of railways. By an extension of the principle on which these companies are founded, it may be possible to divide the enormous amount of duty and responsibility which attaches to the directors of railways, and which almost always proves detrimental to efficiency and economy.

A singular accident occurred last week at Silverdale, in North Staffordshire, by which a pit-sinker, named Jabez Browning, lost his life, he having had his head blown off. He and another man were engaged in sinking a shaft, and two other men were also engaged in sinking a similar shaft within eight yards of the first one. They had worked to within eight feet of each other by "crutting," when the men in the second shaft gave notice that they were about to fire a shot. Deceased's companion, a man named Boothby, replied "All right," and the shot, which consisted of three-quarters of a pound of powder, was fired. The result was that it blew out into the shaft where deceased and Boothby were working; the latter was deafened by the report, and the former killed on the spot. Boothby said he was not aware that the others were so near, and there appeared to have been reprehensible carelessness in not ascertaining, before any shot was fired, the direction and extent of the excavations. At the coroner's inquest one of the jurors wished to find Boothby guilty of the manslaughter of Browning, for not having left the shaft when the shot was fired; but he was at length induced to withdraw his opposition to a verdict of "Accidental Death."

#### THE COAL AND IRON OF THE UNITED STATES.

The report of Mr. Irvine, Her Majesty's Secretary of Legation at Washington, communicates a large amount of information on the production and manufacture of coal and iron in the United States. It is to coal and iron that the United States of America mainly owe their vast and rapid strides in wealth and civilisation. The railroad paves the way; and multitudes collect from every part of Europe and the Eastern Continent, building great cities, and turning the wild prairies of the West into productive fields of corn. The railroad, again, conveys the produce of their industry to other settled countries, which supply them in return with all those articles of manufacture which their still scanty population does not enable them to produce. As is well known, both coal and iron are found in extraordinary abundance in North America. The minerals lie, in many cases, much nearer the surface than in Europe, and are, therefore, more easily got. In consequence, in many of the less advanced portions of the country the iron is worked by small forges, whose owners follow likewise the trade of blacksmiths, mining the ore one day and forging it the next.

**COAL.**—Excepting only Great Britain, no country in the world possesses so much coal in proportion to its area as the United States. The area of the coal land in the twelve coal-producing states is estimated at 133,132 square miles, whilst the area of the coal land in Great Britain is 11,859 square miles. Whilst, however, the produce of the coal mines in Great Britain in 1857 was 67,000,000 tons, that of the mines of the United States in the same year—the last in which accurate statistics were obtained—was 10,500,000 tons. The production of coal in the United States is, however, steadily increasing. There are four great coal fields in the United States, and their products may be classed under two general heads—antracite and bituminous; and these again may be sub-divided into semi-antracite and semi-bituminous coals. The gas or Cannel coal is not frequently found. Pure antracite coal is found chiefly in Pennsylvania, Massachusetts, and Rhode Island; it contains a greater proportion of carbon—90 to 94 per cent.—than any other description of coal; it is the cheapest and best fuel for smelting and melting iron, and other metals. In the City of Philadelphia the inhabitants burn antracite coal, and a very agreeable contrast is presented by its clear atmosphere—through the comparatively little smoke to which this fuel gives rise—to the murky appearance of many of the large cities of our own country. The semi-antracite is also found in Pennsylvania; it contains on the average about 84 per cent. of carbon. The most common description is the bituminous, which contains from 52 to 84 per cent. of carbon. The semi-antracite and the drier semi-bituminous coals are much employed for generating steam. They contain an amount of carbon nearly equal to the pure antracite, and possess a larger proportion of volatile gaseous matter, which enables the fuel to dispense with so great a current of air as is required by the pure antracite; this coal is, therefore, generally used for producing steam where speed is desired, particularly for steam-ship and railway engines. Pennsylvania produced antracite coal in 1859 as much as 7,626,000 tons. There was received at Baltimore, in the same year, of bituminous coal 348,821 tons, and of antracite 268,189 tons. The total coal trade of Pittsburgh and its vicinity exceeds 3,000,000 tons annually. At Chicago in 1859 there was received 131,204 tons of coal. In the same year there was received at Boston 570,325 tons of American, 26,407 of British, and 83,808 of British American coal. Whilst there was imported into Philadelphia, in 1859, British coal to the extent of 1623, and of British American 231, in all 1854 tons, there was exported from the same place 23,446 tons.

**IRON.**—Mr. Irvine divides the iron manufacture of the United States into three departments—1, the blast-furnaces using antracite coal, charcoal, raw or coked bituminous coal; 2, bloomeries or mountain forges, which turn out ore or cast-iron into bloom or malleable iron; and, 3, rolling-mills, converting these into bar, rod, sheet, and nail-plate iron, and into rails. In 1857 the works of these kinds amounted to about 1131—namely, 121 antracite furnaces, 500 charcoal and coke furnaces, 300 forges, and 210 rolling-mills; and the entire produce of iron was about 783,000 tons, a decrease upon the previous year of 856,235 tons, in 1856 the total domestic produce of pig, and of rolled and hampered iron, was 856,235 tons. In 1859 there were only eight States of the Union destitute of iron-works—Mississippi, Louisiana, Florida, Texas, Iowa, Minnesota, California, and Oregon. The remaining twenty-five were employing 560 furnaces, 359 forges, 210 rolling-mills, in all, 1159, producing 840,000 tons—an increase, in two years, of 28 works, and of 57,000 tons of iron. In 1858 the Pennsylvania iron-works produced 243,484 tons of antracite iron; in 1857, 237,518 tons; in 1856, 185,000 tons; and, in 1855, 236,332 tons. To this may be added the production of charcoal iron, amounting to 39,500 tons. The fall in the manufacture of 1859 was caused by the crisis of the previous year, produced by over speculation in the West. The quantity of iron of all kinds, used in every form of manufacture in the United States, was calculated, in 1856, to be 1,330,548 tons; of this quantity 817,356 tons were rolled and hammered iron, 298,275 tons of which were imported, the remaining 519,081 tons being domestic produce. The domestic pig-iron consumed in the same was 337,154 tons, and of foreign 55,403 tons.

In 1859 there was a marked increase in the production of the Pennsylvania rolling mills; large orders were received for rails from the South and West. The railroads in those parts of the Union had originally been mainly constructed of imported rails, of a cheap and inferior quality, which had very soon become unfit for use, and it was discovered to be better policy to pay a higher price for more durable iron. The larger rolling mills for railway iron in the neighbourhood of Philadelphia are the Cambrian Mills at Johnstown, the Phoenix Iron Company at Phoenixville, the Montour Mills at Dazville, the Lackawanna Mills at Scranton, the Rough and Ready at Danville, and the Trenton Mills. The production of rails in 1859 was 104,350 tons; in 1858, 65,500 tons; in 1857, 70,000 tons; and in 1856, 76,300 tons. During the latter part of 1858 the mills were wholly or partially closed. The activity of the iron manufacture in Pennsylvania continued during the first part of 1860, but since October in that year it has, of course, like the other industries of the States, experienced a severe check. Many of the mills have stopped work through the Secession movement as early as Christmas last.—*Engineer.*

**COPPER MINING IN LAKE SUPERIOR.**—As a reply to certain correspondents of the *Mining Journal*, who entertain the opinion that "the palmy days of the Lake Superior Mines are gone," that "the 'cute Yankees are not the men to sell a weight in the balance," that "profits wane and dividends do not constitute a present and future value of a mine," that "sulphur copper may hold to a great depth in the Lake mines, though experience and opinion elsewhere are against it, &c. Mr. F. A. Artault, the indefatigable agent of the Ontonagon Mining District Association, has reviewed the correspondence in a lengthened communication to the editor of the *Lake Superior Miner*, and very wisely suggests that all the mining companies of the Ontonagon, Houghton, and Marquette, should have their interests represented in the International Exhibition of 1862, that these encouraging correspondents may examine in the large halls of the palace the solid and wealthy blocks of copper smelted by Nature.

"The best answer," he concludes, "we can make to calumny and jealousy, is to show our big samples. Let us go to work and be ready."

THE COAL TRADE OF THE UNITED KINGDOM—No. I.		
Inspector.	District.	Collieries.
MATTHIAS DUNN,	Durham and Northumberland	142
Newcastle-on-Tyne,	Cumberland	28—170
JOHN J. ATKINSON,	Durham, South Division	141
CHARLES MORTON,	Yorkshire	387
John HEDLEY,	Derbyshire	153
Derby.	Nottinghamshire	21
Leicestershire	Leicestershire	14
Warwickshire	Warwickshire	17—205
THOMAS WYNNE,	Staffordshire, North	127
Stone.	Cheshire	35
JAMES P. BAKER,	Shropshire	68—230
Wolverhampton.	Staffordshire, South	441
JOSEPH DICKINSON,	Lancashire, North and East, or the Manchester District	266

agents of the large enterprising commercial establishments. The iron and coalowners themselves, who must reap any benefit there may be attained by such an association, do not fully recognise it.

#### MINING SHARE DEALING—THE PELYN WOOD MINE.

Although few classes of speculative investment are more remunerative to capitalists than mining, there is probably no occupation connected with our national industries that suffers so much from the continued and unjustifiable attempts of individuals, who have been overtaken by misfortune in their ordinary business, to prove that mining has been their ruin, and that they were induced to invest in it through false and fraudulent misrepresentations—sometimes on the part of those through whom they have dealt, sometimes on that of the parties who have prepared a given prospectus. The simple fact that the profits realised upon mining frequently reach ten, twenty, or even fifty per cent. per annum upon the amount embarked, is sufficient to lead the practical man of business to conclude that the risk will be greater than upon transactions which promise only to return three or five per cent., and, as in all commercial dealings, the calculations as to the desirability or otherwise of the investment are made accordingly. But there is a class of individuals who assume that error in judgment upon their part is impossible, and that nothing can prevent them becoming suddenly rich from the rapid return of the fabulous profits, with which miners are so familiar, upon the money they have staked. These thoughts stimulate those themselves, in fact, very much in the position of a man who, commencing the business of an Australian merchant without credit and with a capital of only 10,000*l.*, exports 10,000*t.* worth of merchandise in a single bottom. His chances of failure are evidently two-fold at least—the proceeds may not be forthcoming until he has been delayed by the delay, or the ship may be lost altogether, and his ruin effected at a single stroke. His error is that he has speculated beyond his means, and the consequence is that, unless every event should happen precisely as he has hoped, he is a ruined man.

A case of importance to the mining interest, as affording an evidence of the mode in which it is endeavoured to shake the confidence of the public in the stability of mining enterprise—that of Bradley v. Fuller—was tried at the Croydon Assizes on Saturday, but notwithstanding the effect of the verdict was to prove that no deception whatever had been practised upon the plaintiff, and that loss had accrued to him only through his sanguine hopes not having been realised. It appears that in Dec., 1859, and the following month, Mr. Bradley purchased certain shares in the Pelyn Wood Mine, which was represented by the promoters to be a mine of very great promise, or, as Cornishmen usually express it, "one of the richest mines in Cornwall." Mr. Bradley having read a very minute report, from the captain, in the *Mining Journal*, alleged that he went to Mr. Fuller's office to ascertain whether the details given could be relied upon, and that from the information obtained from him he was induced to purchase shares upon which a loss had accrued; he (Mr. Bradley), therefore, sought to recover 32*l.*, being the sum paid for the shares purchased, and the amount of calls paid upon them. The first transaction which Mr. Bradley had in Pelyn Wood shares was with Mr. Torkington, a gentleman he had long known, and who sold him 20 shares for 56*l.* 10*s.* The market price improved, and a few days afterwards he bought 40 shares of Mr. Fuller for 120*l.*; then 20 shares of Mr. Broadwater for 62*l.* 10*s.*; and lastly 20 shares of Mr. Powell for 61*l.* 5*s.* Upon these shares he paid one 5*s.* call, which amounted to 23*l.* 15*s.*, and raised his supposed claim against Fuller to 32*l.* In January of the present year the shares were forfeited for non-payment of call, and Mr. Bradley now sought to reimburse himself by alleging false and fraudulent representations against the purser of the mine.

The knowledge and memory of Mr. Bradley seem to have been unfortunately elastic, and when under cross-examination by Mr. Lane, Q.C., he admitted quite as much to prejudice his own cross-examination that of his witnessess (the want of evidence of fraud was so apparent that at the close of the plaintiff's case Mr. J. Barry, the solicitor for the defendant, declined upon not calling witnesses for the defense). Mr. Bradley admitted that he had known Mr. Torkington, of whom he purchased the first lot of shares, for some years, but did not know his profession; he jobbed about the market, and was usually called a "stag." Mr. Torkington had spoken to him three months previously about the Pelyn Wood Mine, and told him that a good thing was coming out; but it was the representations of Fuller that induced him to become a shareholder. He (Mr. Bradley) had it never read the *Mining Journal*—that was to say, he never subscribed to it; he only read it at the Jamaica Coffee-house, where he went every morning to read the newspapers. He had attended the company's meetings and signed the cost-book, because they would not let him vote with it. He discovered in Jan., 1860, that he was being swindled, but continually attended the meetings to see to what extent. The highest price he paid for shares was 3*l.* 2*s.* 6*d.*, and he had not seen them quoted above 3*l.* 4*s.* He believed Mr. Lane offered him 3*l.* 4*s.* for 20 shares, but did not know whether he was in earnest. He would not sell, because he thought it a good investment. He voted against the resolution to purchase the South Pelyn Wood sett, because in his opinion it belonged to them already. He would not pay any more calls, so let his shares be forfeited, and then brought the action. The prospectus when read, Mr. Justice Blackburn remarked that it would save time, as, so far as he could learn, the defendant had only repeated verbally what he previously had printed and published in the prospectus. Upon the examination-in-chief being resumed, Mr. Bradley stated how he had become acquainted with the various parties of whom he purchased the shares, and remarked that Mr. Fuller's statements were so much more florid than anything he had read in the *Mining Journal* that he was so overcome that he bought the shares. The evidence of the captain of the mine was deemed so important by both parties that Capt. Seymour was subpoenaed both by the plaintiff and the defendant. The plaintiff wished to prove that at the time he purchased the shares the mine was largely in debt, instead of being clear, as represented, 20*l.* 12*s.* 10*d.* in hand; but Capt. Seymour's evidence was to the effect that his reports were true to the best of his knowledge, that he had based them upon the assays obtained from Jenkins, of Callington, whom he had himself employed, Bader, of Redruth, and some London assayer, whose name he did not recollect, and he suggested that the samples might have been changed after they were taken from the mine. He believed that the mine was a good one if properly worked, and that 500*l.* or 500*l.* now expended would place it in a paying state. In cross-examination, Capt. Seymour stated that his assertions as to the value of the mine were sincere when he made them, and he entertained the same opinion still. Fowey Consols, several of the lodes in which ran through the Pelyn Wood sett, had returned 1,200,000*l.* profit to the adventurers. He had himself claimed half of the South Pelyn Wood sett, and received 10*l.* for his half, but would not swear that he had not received that at 50*l.* He had read the statement in the prospectus that pitchers were working at tributes of 3*s.* and 4*s.* in 17*s.*; that was not correct, the average was 5*s.* in 17*s.* He recollects that, in Dec., 1859, there was a pitch working at 2*s.* in 17*s.* and several were working at 3*s.* and 4*s.* in 17*s.* for copper, and 10*s.* in 17*s.* for silver. Mr. G. I. Soper, the purser, who held office previous to Mr. Fuller, and Mr. Edwin Jones, one of the directors, were also examined, but nothing of importance was elicited from their evidence.

The counsel for the plaintiff—Mr. Laxton—having detailed the hardship which was experienced by Mr. Bradley through the non-success of the mine, Mr. Prentice, the junior counsel for the defendant, urged that Mr. Bradley was not the novice in mining affairs he pretended to be, that he was a man of the world and of long business experience, and not so easily duped. The defendant, moreover, would be a much greater loser than the plaintiff, and certainly had suffered quite as much from over-sanguine expectations having been held out. They had heard Capt. Seymour declare that he still believed the mine to be a desirable investment, and nothing that was imputed to the defendant was more sanguine than what had previously been stated in the *Mining Journal*. Indeed, Mr. Fuller would have been justified in stating more than he did. He did not see how upon the facts of the case, upon the evidence of the plaintiff, or on that of his witnessess, they could find the defendant guilty of the deliberate fraud with which he had been charged, nor even of representing to the plaintiff that which he did not himself believe to be true. The charge of fraud they would, he thought, agree with him in considering as an afterthought.

Mr. Justice Blackburn then explained to the jury the various representations of which the plaintiff relied, and said that in order to establish his case the plaintiff must show, not merely that there had been mistake and negligence, but that the statements and representations made by Mr. Fuller in the prospectus produced were fraudulent and untrue to defendant's knowledge. If he knowingly made false representations to the plaintiff, and thereby induced him, on the faith that they were substantially true, to purchase the shares, they would find their verdict for the plaintiff. In other words, if it was made out to their satisfaction that the statements and reports which were from time to time sent up by Capt. Seymour to Mr. Fuller were wrong and inaccurate, and that Mr. Fuller endorsed them knowing that they were wrong and false, then that would be decided fraud, and the plaintiff would be entitled to their verdict, with such damages as he had sustained by the purchase and loss of his shares. Capt. Seymour had been called before them by the plaintiff, and Mr. Laxton had said the plaintiff was obliged to call Capt. Seymour, but that he was more the defendant's witness than plaintiff's. Now he (the learned judge) agreed with what had been said by Mr. Prentice on that subject—namely, that Capt. Seymour was their witness and not his; for it certainly appeared to him (Mr. Justice Blackburn) that Capt. Seymour was rather hostile than otherwise to the defendant, and that he was ready and willing to say all the evil he knew of him. However, he was called, and did not prove anything calculated to show that Mr. Fuller was guilty of fraud or falsehood in what he had said about the Pelyn Wood Mine. Whatever the assayers had certified as being the percentage of the various ores submitted to them—copper, nickel, cobalt, and silver—might certainly have carried conviction to the mind of Mr. Fuller as well as any other person; and it was hardly necessary to say that they (the jury) ought not to find a man guilty of false statements, unless they were clearly brought home to him. It was for them to say whether the plaintiff's case was made out. He should say himself that what they would look to would be the real substantial inducement to buy the shares. If they thought that the defendant did not make the statements to the plaintiff falsely, and knowing them to be false, they would find for the defendant.

The jury, after a minute's deliberation, found a verdict for the defendant. The trial commenced at nine in the morning and concluded at five in the afternoon. Throughout the day the Court was crowded to excess by persons connected with mines and mining speculations, and much interest was excited, it being pretty well understood that if the plaintiff succeeded in obtaining a verdict, a number of similar actions against the same defendant would follow upon that result.

**SWANPOLE MINE.**—The Vice-Warden of the Stannaries has directed a dividend of 6*s.* 8*d.* in 17*s.* to be paid forthwith. The company's debts were 2500*l.*, and the official liquidator has realised 1402*l.* 19*s.* 6*d.* The expenses of winding-up have been 53*l.*, leaving a balance of 867*l.* 19*s.* 6*d.* out of which the above dividend will be paid.

**ACCIDENT AT A COLLIERY TRAMWAY.**—At the South Lancashire Asizes, Sarah Whittaker, as administratrix of S. Whittaker, sued Messrs. Lees, colliery owners, Oldham, for loss sustained in the death of her husband, through the alleged negligence of the defendants. After a protracted investigation, the judge asked whether the plaintiff would elect a verdict for the defendants, or a nonsuit. Sergeant Wheeler suggested a verdict for the defendants, in order that he might have an opportunity of moving the Court above. The judge, however, ordered a nonsuit, remarking that he did not believe there was any obligation on the defendants, and that he would not place the plaintiff in a position to spend her money in litigation. A nonsuit was then entered.

**MINE ACCIDENTS.**—At the River Tamar Mine, B. Mitchell fell down the shaft and was killed. The captain of the mine, J. Cook, ascended with the deceased, but the latter had for some purpose to go down again, and in doing so he slipped from the ladder, and met his sad fate.—As a miner at Tincroft Mine was engaged in tampering, the hole exploded, carrying away part of his hand, and it is feared he will lose his sight. Another miner was also injured.

**WELSH SLATE TRADE.**—A fact of considerable interest in connection with London companies engaged in working Welsh slate quarries was recorded by a dinner given at the Commercial Hotel, Portmadrone. In 1841, Mr. W. B. Chorley, an Englishman, commenced the Cwmorthin Slate Quarry, at Festiniog, and continued it with varying success until 1855, when Mr. Chorley became bankrupt, and the quarry property was thrown into Chancery. About two years since the Court of Chancery decreed the quarry property, not to the mortgages, but to Messrs. Chorley and Melville, two of the partners, and it is now being again worked with success. Mr. Chorley received a

## THE MINING JOURNAL.

second-class certificate from the Commissioners of Bankruptcy, and was consequently freed from all liability; but he resolved to dispose of his interest in the quarry, and pay the whole of the creditors under the bankruptcy 20*s.* in the pound, which was done at the dinner mentioned.

#### TRUTH'S ECHOES; OR SAYINGS AND DOINGS IN MINING.

Notwithstanding the slight fluctuations which have taken place during the past week, there is evidently a more favourable tone given to the Mining Share Market generally than witnessed for some months past. The enquiries recently made have resulted in *bona fide* transactions in numerous instances, and a goodly number of shares, especially in progressive mines, have changed hands. The unprecedented low figures to which many mines receded, and the improvement in the standard for copper ore, with other contingencies, have, no doubt, been the incentive to purchasers; and at no time could investments be made more favourably than at the present.

WHEAL SETON shares have been in good request, and changed hands at higher rates, but a change has followed.—EAST BASSER shares continue heavy, and are offered at lower prices.—COOK'S KITCHEN shares have been in demand at improved prices, in consequence of an improvement in the mine.—STRAY PARK shares have rallied a little, and are more in demand.—PROVIDENCE shares have changed hands at present quotations.—EAST CARADON shares have been in good request at improved rates, and a great many changed hands. Yesterday a further advance took place, and shares are firm at much higher quotations.—MARKE VALLEY and WEST ROSE DOWNS shares have been sought for at advanced prices, and continue in favour; the latter have considerably improved in price, and are likely to go higher, from the scarcity of shares.—WEST CARADON shares are offered at lower rates, and buyers shy with present prospects, although the sale yesterday was very good.—LUDCOTT shares have been very much in demand from recent low figures, and are still sought for at improved rates.—CARN CAMBORNE shares have been in good demand, and several transactions followed, arising from a reported improvement in the south lode.—GREAT RETTALLACK and EAST GRENVILLE shares have been freely dealt in, and prices tend upward.—UNITY and CALVADACK shares have been enquired after and transacted.—NORTH DOWNS shares were in good demand and largely dealt in last week; and notwithstanding the declaration of the dividend of 2*s.* 6*d.* the shares have receded. It is to be regretted that dividends should be made in anticipation of ore bills not at maturity, as it clearly shows the object in view.

—NEW TRELEIGH shares have been done much lower, and from the number offered they are likely to decline more.—GREAT TREVEDDOE shares were in good demand last week, but few have been transacted this week, and the prices are quoted lower.—GREAT WHEAL MARTHA shares have been in good request during the past two days, and are much firmer, with a likelihood of a great rise.—LADY BERTHA shares are in demand at present prices.—SOTRIDGE CONSOLS shares have been done at lower rates.

At GREAT WHEAL MARTHA the excellent prospects are unabated, whilst the engine-shaft is going down rapidly in very favourable ground for sinking. They have met with a small branch in their progress, which, from its character, is highly favourable, and further encourages the hope that a large and productive lode will be cut in the 50 fm. level. The crusher commenced working on Tuesday last, and they calculate now having full 500 tons ready for the next sampling. There is no change in the productive places, and the tribute department is looking equally well.

At KELLY BIAW an improvement has taken place in the winze sinking under the 60, estimated worth 20*s.* per fathom; and from present appearances there is reason to expect further improvements in the eastern part of the mine.

At EAST GUNNIS LAKE they have a very promising lode in the 36 east, which is unusually large, and producing fully 4 tons per fm.; and there are two winzes which are looking very well at present, but the stopes have very much failed. There are some favourable points which are expected to come off shortly, which may give more encouragement should the result be as anticipated.—HAWKMOOR is represented as improved in the 25 east, where they have a lode 3 ft. wide, half of which will yield 3 tons per fm. of good ore. The other places are without any change.—At EAST DEVON CONSOLS it is reported that they have a change of ground in the 40, which it is hoped will result in something favourable. The shaft continues sinking in favourable ground, which is now down 12 fms. below the 40.

GREAT TREJUNION CONSOLS is represented to be looking remarkably encouraging. The lode in the 80 west is very large, and increasing in size and character, and from present appearances there is no doubt of a course of ore being not far ahead; the lode being from 5 to 5 ft. wide, the ore part being nearly 2 ft. wide. They are now hauling some good work to the floors.

At EAST GUNNIS LAKE they have a very promising lode in the 36 east, which is unusually large, and producing fully 4 tons per fm.; and there are two winzes which are looking very well at present, but the stopes have very much failed. There are some favourable points which are expected to come off shortly, which may give more encouragement should the result be as anticipated.—HAWKMOOR is represented as improved in the 25 east, where they have a lode 3 ft. wide, half of which will yield 3 tons per fm. of good ore. The other places are without any change.—At EAST DEVON CONSOLS it is reported that they have a change of ground in the 40, which it is hoped will result in something favourable. The shaft continues sinking in favourable ground, which is now down 12 fms. below the 40.

At SOUTH CARADON the excellent prospects are unabated, whilst the engine-shaft is going down rapidly in very favourable ground for sinking. They have met with a small branch in their progress, which, from its character, is highly favourable, and further encourages the hope that a large and productive lode will be cut in the 50 fm. level. The crusher commenced working on Tuesday last, and they calculate now having full 500 tons ready for the next sampling. There is no change in the productive places, and the tribute department is looking equally well.

At GREAT WHEAL MARTHA shares have been done at lower rates, and from the number offered they are likely to decline more.—GREAT TREVEDDOE shares were in good demand last week, but few have been transacted this week, and the prices are quoted lower.—GREAT WHEAL MARTHA shares have been in good request during the past two days, and are much firmer, with a likelihood of a great rise.—LADY BERTHA shares are in demand at present prices.—SOTRIDGE CONSOLS shares have been done at lower rates.

At GREAT WHEAL MARTHA the excellent prospects are unabated, whilst the engine-shaft is going down rapidly in very favourable ground for sinking. They have met with a small branch in their progress, which, from its character, is highly favourable, and further encourages the hope that a large and productive lode will be cut in the 50 fm. level. The crusher commenced working on Tuesday last, and they calculate now having full 500 tons ready for the next sampling. There is no change in the productive places, and the tribute department is looking equally well.

At KELLY BIAW an improvement has taken place in the 80 east, estimated worth 20*s.* per fathom; and from present appearances there is reason to expect further improvements in the eastern part of the mine.

At NEW CROW HILL the ground at the shaft continues good for sinking. The lode in the 35 is not yet cut through, but is rather improving than otherwise in driving. No alteration in the 15. Two more men are put on in the 55 east, and from the nature of the ground, the progress is likely to be rapid. The lead ore has been sold at 15*s.* per ton.

At SOUTH CARADON is one of the richest mines in Cornwall, and is laying open most extraordinary reserves of copper ore. In the 60 the caunter lode has been driven on nearly 50 fms., the actual produce of which has been 86*l.* per fm. for the whole drivage; and it should be remembered, not a pick has been put in the back of the 60 as yet. The sampling of 280 to 290 tons for sale this week has been raised from the 50 east and the 50 stopes, together with ore broken in driving the 60. Seccombe's shaft is sinking on a splendid lode, with every indication of a course of ore being near their present operations, so that an early discovery may be expected. The next sampling will probably be 300 tons; and as the Cornish Railway is now brought up to East Caradon dressing-rooms, the cost of carriage will in future be reduced.

At WHEAL GRIEVS.—Your valued Truro Correspondent called attention to this mine last week, and stated that it "has been a great success." Steam stamps are at once to be erected, and the future of this concern will show the shareholders and the public a mine of no small magnitude, and that of a great and profitable concern. Very little has ever been said or written about this concern, the best proof being the monthly returns of tin and profits.

At PAR CONSOLS.—The improvement continues in the copper district of this mine, which may lead to very important results.

At NEW CROW HILL.—The ground at the shaft continues good for sinking.

The lode in the 35 is not yet cut through, but is rather improving than otherwise in driving. No alteration in the 15. Two more men are put on in the 55 east, and from the nature of the ground, the progress is likely to be rapid. The lead ore has been sold at 15*s.* per ton.

At SOUTH CARADON is one of the richest mines in Cornwall, and is laying open most extraordinary reserves of copper ore. In the 60 the caunter lode has been driven on nearly 50 fms., the actual produce of which has been 86*l.* per fm. for the whole drivage; and it should be remembered, not a pick has been put in the back of the 60 as yet. The sampling of 280 to 290 tons for sale this week has been raised from the 50 east and the 50 stopes, together with ore broken in driving the 60. Seccombe's shaft is sinking on a splendid lode, with every indication of a course of ore being near their present operations, so that an early discovery may be expected. The next sampling will probably be 300 tons; and as the Cornish Railway is now brought up to East Caradon dressing-rooms, the cost of carriage will in future be reduced.

At WHEAL GRIEVS.—Your valued Truro Correspondent called attention to this mine last week, and stated that it "has been a great success." Steam stamps are at once to be erected, and the future of this concern will show the shareholders and the public a mine of no small magnitude, and that of a great and profitable concern. Very little has ever been said or written about this concern, the best proof being the monthly returns of tin and profits.

At PAR CONSOLS.—The improvement continues in the copper district of this mine, which may lead to very important results.

At NEW CROW HILL.—The ground at the shaft continues good for sinking.

The lode in the 35 is not yet cut through, but is rather improving than otherwise in driving. No alteration in the 15. Two more men are put on in the 55 east, and from the nature of the ground, the progress is likely to be rapid. The lead ore has been sold at 15*s.* per ton.

At SOUTH CARADON is one of the richest mines in Cornwall, and is laying open most extraordinary reserves of copper ore. In the 60 the caunter lode has been driven on nearly 50 fms., the actual produce of which has been 86*l.* per fm. for the whole drivage; and it should be remembered, not a pick has been put in the back of the 60 as yet. The sampling of 280 to 290 tons for sale this week has been raised from the 50 east and the 50 stopes, together with ore broken in driving the 60. Seccombe's shaft is sinking on a splendid lode, with every indication of a course of ore being near their present operations, so that an early discovery may be expected. The next sampling will probably be 300 tons; and as the Cornish Railway is now brought up to East Caradon dressing-rooms, the cost of carriage will in future be reduced.

At WHEAL

## THE SLATE MOUNTAIN COMPANY (LIMITED).

Capital £50,000, in 6000 shares of £5 each.

Deposit, £1 per share; and £1 upon allotment.

Registered pursuant to the Joint-Stock Companies Acts, limiting the liability of each shareholder to the amount of their subscriptions.

Chairman—Major-General MASON, Brompton.

DIRECTORS.

ALEXANDER CURRIE, Esq., Teignbridge, Newton Abbott.

JOSHUA FINNER, Esq., South American Chambers, Cecil-street, Strand.

Col. GEORGE M. GUMM, Beaumont-street, Portland-place.

JOSEPH HOPGOOD, Esq., Addison-road, Kensington, W.

Capt. JORDAN, Chertsey, Surrey.

EDWARD FREDK. LEWIS, Esq., F.L.S., 2, Walbrook, E.C.

JOHN WALKER, Esq., Kenilworth House, Cheltenham.

BROKERS—Messrs. Ross, Lainson, and Bedford, 4, Lothbury.

Henry Print, Esq., Park-row, Leeds.

James Case, Esq., Liverpool.

H. W. Poutney, Esq., 5, Royal Exchange, Manchester.

Messrs. Stephens and Son, 44, Dame-street, Dublin.

Messrs. Adamson and Horne, 45, Marischal-street, Aberdeen.

Messrs. R. Masey and Son, Birmingham.

Messrs. T. and A. Fox, 51, Dame-street, Dublin.

SECRETARY (pro tem.)—Mr. Down.

OFFICES,—4, LOTHBURY, LONDON, E.C.

This company has been formed for the purpose of purchasing an unusually long lease or grant, to work certain veins of slate rock extending under about 100 acres, situated on the north-east side of a farm called Crosses Bach, in the parish of Llanfrothen, in the county of Merionethshire, and believed by competent judges to be the richest known slate deposit in all Wales.

The slate made in these quarries equal in colour and durability the Festiniog slates, and it will be seen, on reading the reports, that the property is sufficiently extensive to admit of the employment of from 400 to 500 men with great advantage.

The carriage of the slate to Port Madoc for shipment will cost about 7s. 6d. per ton; and with a working capital of £10,000 it is estimated that 7000 tons of slate can be made annually, which would realise a profit of about 48 per cent. per annum.

Mr. Robert Hunt, F.R.S., compiler of mining records for the Government, has recently made a calculation as to the average of the profits from the workings of slate quarries in Wales; he gives them at upwards of 50 per cent., and some of the large quarries, it is confidently affirmed, realise as much as 100 per cent.

To insure subscribers from any loss, which often arises when a sufficient number of shares are not subscribed for, the directors bind themselves to return the whole of the deposit money, unless at least one-half of the shares be taken.

A considerable portion of the required capital has been already privately subscribed. The company will be managed under Table B of the Joint-Stock Companies Act. All questions of general importance will be decided by the shareholders, at meetings summoned specially.

Applications for shares, with a deposit of £1 per share, can be sent to the brokers, or to the secretary, at the company's offices.

Samples of the slate rock from the quarry can be seen at the offices, 4, Lothbury.

Full prospectus, with reports upon the quarry by one of the Government Geological Surveyors; Mr. Jones, the slate merchant in the City-road; Mr. William Griffiths, the manager of the Mowyn Quarries; Mr. William Jones, the manager of the Bwch-y-Groes and Bryn Mawr Quarries; Capt. Silas Evans, of Owca, manager of the Carysfort Mines; and other practical and experienced authorities, together with forms of application for shares, can be obtained from the secretary, at the company's offices, 4, Lothbury, or from any of the brokers.

## THE CENTRAL SAILBEACH MINING COMPANY (LIMITED).

Capital £10,000, in 10,000 shares of £1 each.

Deposit, 2s. 6d. per share, payable at Messrs. Rocke and Co.'s, Bankers, Shrewsbury, upon application, which will be returned if no allotment be made to the applicant.

For detailed prospectus, see *Mining Journal* of July 27, p. 490; and of the 3d inst., p. 502, for a copy of the report upon the sett, by Messrs. Phillips and Darlington.

The following communication has since been received from John Evans, for upwards of 40 years employed in the Snailbeach Mine, and now one of its resident captains; also from Mr. David Davies, for more than 20 years connected with the same mine, and now its resident practical and civil engineer:

*Snailbeach Mine, Minsterley, Aug. 20, 1861.—DEAR SIR: Since the publication of the report dated 13th ult., of Messrs. Phillips and Darlington, upon the Central Snailbeach mining sett, we have, at your request, carefully considered whether, from our practical knowledge of the workings of the Snailbeach Mine, especially its western drivings, we can point out the actual strike of the Snailbeach main lode. We are now convinced that the strong vein, delineated in the south-eastern boundary of the plan of the Snailbeach sett, is none other than the champion, or main lode of this mine. In 'Crown's Nest' level, where it appears, we find it to be similar in all respects to the western drivings of this mine, and its underlie there, as in this, to the depth of 150 yards will be towards the north, with subsequently a slight change from north to south; in fact, in this mine the lode becomes nearly vertical, so much so that our opinion is a shaft may be sunk 600 yards, and yet the lode will be within the Central Snailbeach sett.*

To S. Harley Kough, Esq. JOHN EVANS, DAVID DAVIES.

Prospectuses, copies of the reports, and plans of the sett, with further information, may be obtained from Mr. Job, Mr. DAVID DAVIES, or Mr. RICHARD WARDMAN, all of Snailbeach, Shropshire; Messrs. PHILLIPS and DARLINGTON, 26, Gresham-street, London; or from the undersigned, to whom all applications for shares are to be made. Early applications are requested.

SAMUEL HARLEY KOUGH,

Shrewsbury and Church Street, solicitor to the promoters.

## EAST WHEAL MARTHA MINING COMPANY (LIMITED).

Capital £15,000, in 6000 shares of £2 10s. each.

5s. per share to be paid upon application, and 5s. upon allotment. All future calls not to exceed 5s. per share, and not often than quarterly.

DIRECTORS.

GEORGE SEARBY, Esq., Crown-court, Threadneedle-street, London.

EDWARD WILLIAMS YARROW, Esq., 14, Arundel-square, London.

JAMES LANE, Esq., 44, Threadneedle-street, London.

T. C. HAWKINS, Esq., 9, Broad-street, Oxford.

THOS. COOPER SMITH, Esq., Warford-court, Throgmorton-street.

BANKERS—London and County Bank.

SOLICITOR—Frederick Wm. Snell, Esq., 1, George-street, Mansion House.

AUDITORS—Messrs. Cooper Brothers and Co., 13, George-street, Mansion House, London.

CONSULTING AGENT—Capt. Joseph Richards.

SECRETARY—Mr. E. Evans.

OFFICES,—23, MOORGATE STREET, CITY, LONDON, E.C.

The object of this company is to purchase and work the mineral ground lying between the Devon Great Consols and the Great Wheal Martha.

There are few instances of mining where success would appear to be more certain than in this case, as this mine is situated west of the Devon Great Consols, and east of the Great Wheal Martha. The success of the former mine is too well known to the public to require much comment, but it may be stated that it has returned in dividends nearly £1,000,000, on an original capital of £1024. The Great Wheal Martha Mine is one of the most successful instances of an old mine being reworked, the company having sold in a few months ores to the amount of nearly £3500, and having at the present time about 1000 tons of ore broken and being prepared for sale, while the reserves in the different levels amount to more than 5000 tons, and there is no doubt the mine will soon commence paying good and lasting dividends. All this is the produce of one lode only, which has held continuously from the upper to the lower level, and is now in the bottom level 16 ft. wide, a fine course of ore. This lode is by practical men considered to be a continuation of the Devon Great Consols lode, and as the East Wheal Martha Mine is situated exactly between the two mines, there cannot be any doubt of this mine having the same lode running through the entire length of the sett, from east to west; and there is one great fact to be borne in mind, that the further the levels at Great Wheal Martha are driven, the richer the lode becomes; and as the lode is dipping east and passes through this property, there can be no doubt of the mine proving as rich as its neighbours.

This mine will be drained to a considerable extent by the Great Wheal Martha, as the levels in that mine approach it eastward, a fact of the greatest importance as regards the expenditure and development of the mineral wealth contained in this property.

This mine has been worked and a large capital expended by a previous company, but having sunk their shaft down in a valley, where they were inundated with water from the higher ground above them, they were compelled to stop. They had just discovered that they had sunk their shaft too far south to cut the Devon Great Consols lode, which passes through the high ground above, and were making great exertions by driving a level northward to intersect this lode, but want of sufficient steam power, and the shareholders not being inclined to subscribe further, the mine was abandoned.

Arrangements have been made with the present proprietors for the purchase of this property, the proprietors to receive 2500 shares, free of all calls, and £1500 in cash, the latter to be returned to this company by an allowance out of the dues as the ores are raised and sold. This return to be made is a fact of importance, proving that the proprietors have every confidence in the mine making large returns, and bringing them in a large revenue.

Application for prospectuses and plans to be made to Mr. E. Evans, 23, Moorgate-street, London.

The following is a report from Captain Joseph Richards, who, being connected with the underground workings at the Devon Great Consols, must be well acquainted with the run of the lodes and their connection with this property, and quite capable of giving an opinion on the future prospects of this mine:

Aug. 3, 1861.—I beg to hand you my report on this mine. It is situated directly east and adjoining Great Wheal Martha, where large returns of copper ore are being made, and the Devon Great Consols is in a direct line east of East Wheal Martha, so that this mine may be considered to be in a very first-rate position: the great lode of Wheal Martha must run directly through the sett, as well as several other lodes of very great promise. There have been shafts sunk and levels driven in East Wheal Martha, and although they cannot now be seen until the water is in fork, I am assured that the prospects were such underneath as might be fully expected from the very great and good appearances of the lodes at surface. I am fully justified in highly recommending East Wheal Martha as a mining property of very much more than ordinary value as a speculation, and I am of opinion that those who may invest therein will have no cause to regret it, but, on the contrary, have every reason to congratulate themselves on the advisable selection of this extensive and exceedingly tempting property as an investment, containing as it does the necessary elements of success. In addition to the very fine appearances of the lodes themselves, there are cross-courses and intersections thereof, with the lodes attendant on which are often found the most splendid and valuable courses of ore. I will conclude by advising you to commence operations as soon as you can manage to do so, and I am exceedingly sanguine of the results proving in every way all I have said and intended to convey relative thereto. If you will refer to my report on Great Wheal Martha of Oct. 3, 1859, you will perceive that the results are bearing out what I then said of that property, and in East Wheal Martha you have a mine the prospects of which are not exceeded in my belief in any mine in the two counties, and I unhesitatingly advise all and every one who can to take an interest therein.

JOSEPH RICHARDS.

FORM OF APPLICATION FOR SHARES.

Shares £2 10s. each. Deposit on application, 5s. per share.

To the Directors of the East Wheal Martha Mining Company (Limited).—Having paid £2 to your credit at the London and County Bank, Threadneedle-street, City, I request that you will allot me shares in the East Wheal Martha Mining Company (Limited), and I hereby agree to accept such shares, or any less number that may be allotted to me, subject to the provisions of the Joint-Stock Companies Act.

Date \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

## THE MINING JOURNAL.

## GOVERNMENT SCHOOL OF MINES, Jermyn Street.

## GOVERNMENT SCHOOL OF MINES.

DIRECTOR.

SIR RODERICK IMPEY MURCHISON, D.C.L., M.A., F.R.S., &amp;c.

During the Session 1861-2, which will COMMENCE on the 7th October, the following COURSES of LECTURES and PRACTICAL DEMONSTRATIONS will be given:—

1. CHEMISTRY ..... By A. W. HOFMANN, LL.D., F.R.S., &c.
2. METALLURGY ..... By JOHN PERCY, M.A., F.R.S.
3. NATURAL HISTORY ..... By T. H. HUXLEY, F.R.S.
4. MINERALOGY ..... By W. ARTHUR SMITH, M.A., F.R.S.
5. MINING ..... By W. ARTHUR SMITH, M.A., F.R.S.
6. GEOLOGY ..... By A. C. RAMSAY, F.R.S.
7. APPLIED MECHANICS. By R. WILLIS, M.A., F.R.S.
8. PHYSICS ..... By J. TYNDALL, F.R.S.

INSTRUCTION IN MECHANICAL DRAWING, by Mr. BINNS.

The fee for students desirous of becoming associates is £30 in one sum on entrance, or two annual payments of £20, exclusive of the laboratories.

Pupils are received in the Royal College of Chemistry (the Laboratory of the School), under the direction of Dr. Hofmann, and in the Metallurgical Laboratory, under the direction of Dr. Percy.

Tickets to separate courses of lectures are issued at £1 10s. and £2 each.

Officers in the Queen's service, Her Majesty's Consuls, acting mining agents and managers, may obtain tickets at reduced prices.

Certificated schoolmasters, pupil teachers, and others engaged in education, are also admitted to the lectures at reduced fees.

His Royal Highness the Prince of Wales has granted Two Exhibitions, and others have also been established.

For a prospectus and information, apply at the Museum of Practical Geology, Jermyn-street, London.

TRENTHAM REEKS, Registrar.

The Miner's Association of Cornwall and Devonshire.

THE MINER'S ASSOCIATION OF CORNWALL AND DEVONSHIRE.—THE ANNUAL MEETING of the above association will be HELD at the Committee Room of the Polytechnic Hall, Falmouth, at Two o'clock, on WEDNESDAY, the 18th day of September next, when an address will be delivered by the President, CHAS. FOX, Esq.; a report and important communications will be given by the General Honorary Secretary, ROBERT HUNT, Esq., F.R.S.; and papers by other gentlemen read on mining and mine engineering.

The Council request that all papers proposed to be read at the meeting should be forwarded at least one week before such meeting, to Mr. HUNT, at Portreath, near Redruth; or to the undersigned.

## In Chancery.

## TO BE SOLD, BY AUCTION, pursuant to an Order of the

High Court of Chancery, made in a Cause of FORMAN v. HARVEY, with the approbation of the Vice-Chancellor Sir John Stuart, a LEASEHOLD MINE, called WHEAL ANNA, producing TIN and COPPER ORE, with VALUABLE PLANT attached, situate in St. Hilary, in the county of Cornwall. In One Lot, by Mr. JOHN LITTLE, the person appointed by the said Judge, at the Auction Mart, Bartholomew-lane, London, on Wednesday, the 11th day of September, 1861, at Twelve of the clock at noon.

Particulars and conditions of sale may be had gratis of Messrs. OLIVERSON, LAVIE, and PEACHEY, solicitors, 8, Frederick's-place, Old Jewry, London; Messrs. DANGERFIELD and FRASER, solicitors, 26, Craven-street, Charing-cross, London; Messrs. WORDSWORTH, GREATHEAD, and BLAKE, solicitors, South Sea House, Threadneedle-street, London; JOHN TAYLOR, Esq., solicitor, 7, Gray's Inn-square, Holborn, London; at the Auction Mart; at the Hotels, Marazion, Cornwall; and of the auctioneer, at his office, in Redruth, ALMOND H. PAULI, Local Hon. Sec., Camborne.

Dated August 12, 1861.

ALMOND H. PAULI, Local Hon. Sec., Camborne.

ALMOND H. PA

## BEDFORD IRONWORKS, TAVISTOCK.

NICHOLLS, WILLIAMS, AND CO. have generally a GOOD STOCK of SECOND-HAND MINING MATERIALS FOR SALE, including iron-work for a water-wheel, 40 ft. diameter,  $2\frac{1}{2}$  ft. broad. They also MANUFACTURE STEAM ENGINES of every description on the newest principle. Castings and wrought-iron work made at the shortest notice. Machinery sent to all parts of the world. Steam boilers and chains warranted of the best description.

HORIZONTAL STEAM ENGINES FOR SALE, one each of 14, 17, and 20 in. cylinders, 36 in. stroke, quite new. They are especially adapted for mining purposes, and are very substantially made. Also, several of from 6 to 8 horse power.—Apply to Messrs. E. PAGE and Co., Engineers, Laurence Pountney-place, London; Pountney-hill, Cannon-street, E.C.

PATENT LEVER BREAK, FOR RAILWAY WAGONS, doing away with the objectionable break rack. Can be APPLIED TO EXISTING STOCK at a trifling EXPENSE. Royalty moderate. Models can be seen at 34, Stock George-street, Westminster; and the breaks in action at the works of the Railway Carriage Company; at the Peterboro' Station, on the Eastern Counties Railway; the Rugby Station, London and North-Western Railway; the Cardiff Docks Station, Taff Vale Railway; and at the Works, Oldbury, near Birmingham, where all communications are requested to be sent.

INCrustation of STEAM BOILERS.—EASTON'S PATENT BOILER FLUID EFFECTUALLY REMOVES and PREVENTS INCrustation in STEAM BOILERS, WITHOUT INJURY to the METAL, with GREAT SAVING in FUEL, and with LESS LIABILITY to ACCIDENT from EXPLOSION. It is used by Her Majesty's Steam Shipyards, Woolwich Arsenal, Honourable Corporation of Trinity House, Tower of London, India Store Department, by the principal Steam Packet Companies of London, Liverpool, Southampton, Hull, &c., and by engineers, builders, railway companies, and manufacturers throughout the country. Testimonials from eminent engineers, boiler makers, and manufacturers, with full particulars, will be forwarded on application to P. S. EASTON and G. SPRINGFIELD, sole manufacturers of the patent, Nos. 37, 38, and 39, Wapping-wall, London, E.

AGENTS IN GREAT BRITAIN.

Aberdeen, Mr. James F. Wood.  
Aldershot, Mr. S. G. Fielden.  
Aldington-Lyne, Mr. S. G. Fielden.  
Belfast, Mr. W. T. Mather, C.E.  
Birmingham, Mr. Adam Dixon.  
Caster, Mr. W. A. Rowland.  
Devonport, Mr. Cornelius Boulds.  
Dover, Mr. Wm. Flith.  
Folkestone, Mr. W. B. Harvey, Chemist.  
Glasgow, Mr. W. M. Mutter.  
Hartlepool, Mr. W. T. Cheeseman, West.  
Hartlepool, Mr. Thomas Waring.  
Hull, Messrs. A. L. Fleming and Co.

FOREIGN.

Belgium, Messrs. Breuls Brothers, Engineers, Antwerp.  
Holland, Mr. Jos. Courlander, the Hague.  
Rio de Janeiro, Messrs. Miers Brothers and Major, Engineers.  
Greece and South Russia, Mr. W. Baxter, Engineer, Nicolaeff.

HALL AND WELLS, PATENTEES AND MANUFACTURERS of SUBMARINE TELEGRAPH CORES, CABLES, &c. TELEGRAPH CONDUCTORS INSULATED with INDIA RUBBER at £5 per mile and upwards. CORES WARRANTED to STAND the USUAL TEST for INSULATION. Further particulars as to price of cores, cables, &c., can be had on application at 60, Aldermanbury, City, E.C.; and Steam Mills, Mansfield-street, Borough-road, Southwark, S.E.

Copper wire covered with silk, cotton, or any other material, to order.

AUSTRALIA AND NEW ZEALAND  
WHITE STAR EX-ROYAL MAIL CLIPPERS,  
SAILING FROM LIVERPOOL to MELBOURNE on the 1st and 20th of every month.

Passengers holding Victoria passage warrants will be forwarded to Melbourne by these vessels.

Ship. For Register. Burthen. To sail.  
LILLIES..... Melbourne..... 1665 ..... 5000 ..... Sept. 20.  
BLUE JACKET..... Melbourne..... 1559 ..... 4750 ..... Oct. 20.  
LORD RAGLAN..... Melbourne..... 1900 ..... 5500 ..... Nov. 20.

The splendid clipper *Lillies*, will be dispatched for Melbourne as above. She is one of the fastest clippers afloat, has made the passage to Melbourne in 79 days, making the extraordinary distance of 365 miles a day for several days together. Her accommodations for all classes of passengers are very superior.

For freight or passage apply to the owners, H. T. WILSON and CHAMBERS, 21, Water-street, Liverpool; or to GRINDLAY and Co., 124, Bishops-gate-street, and 55, Parliament-street; or SEYOUN, PEACOCK, and Co., 116, Fenchurch-street, London. *Willow's* Australian and New Zealand hand-books sent for two stamps.

CANADA AND THE UNITED STATES—ONE HUNDRED ACRES OF LAND FREE to SETTLERS in CANADA.—SHORTEST ROUTE via PORTLAND in winter, and QUEBEC in summer, by the CANADIAN MAIL STEAMERS, from LIVERPOOL EVERY THURSDAY, and by first-class ships sailing direct to the wharves of the GRAND TRUNK RAILWAY.—For through passage, and every information, apply to SABEL and SEARLE, 19, Water-street, Liverpool; or at the Grand Trunk Company's offices, 21, Old Broad-street, London, E.C.

Emigrants should take through tickets. Government pamphlet, &c., free on application at the London office.

JOHN M. GRANT, Sec.

SAMUEL GRIFFITHS' STAFFORDSHIRE IRON TRADE CIRCULAR. Published every Saturday afternoon. Circulation, 7000 per week. Price £1 per annum, in advance, post free, being registered for transmission abroad at same price.

The IRON CIRCULAR gives the state of the Market with respect to Pig and Malleable Iron; the Official Prices of Bars, Hoops, Sheets, and most other kinds of Staffordshire Iron; a Report of the Iron Trade throughout England, Scotland, and Wales; the Scotch Market up to the close of the market on the day of publication; the Closing Price of the Funds and the principal Railway Stocks up to two o'clock the same day; a Monthly Report of the Iron Trade in France; a weekly Report of the Money Market, London Discount Market, state of the Foreign Exchanges; the Weekly Return of the Bank of England; the Monthly Return of the Bank of France; a correct Weekly Account of all the Gold Ships at Sea, London Bound; likewise an accurate Weekly Return of all the Gold and Specie received during the week; a Report of the Copper Market, with prices of all kinds; a Report of the Tin Market, with present prices, and the same of Lead and Spelter, every week. The IRON CIRCULAR likewise contains an account of all Failures, Dissolutions of Partnerships, Changes in Firms, Stoppage of Works, Works recommencing, New Works, or those in course of erection; in a word, the CIRCULAR gives every information connected with the Iron Trade which Mr. GRIFFITHS, whose well-known connection with it, considers would be useful and acceptable to the Ironmaster, the Merchant, the Shipper, Banker, or any other Buyer of Iron. The same may be had with regard to Copper, Tin, Spelter, and Lead. A Tabular Statement will be published with the CIRCULAR every three months, showing the number of Furnaces in and out of blast in all the Iron Districts, the quantity of Iron made, and likewise the quantity of Coal and Ironstone consumed in its production.

Parties wishing to subscribe will send a post-office order, addressed to S. GRIFFITHS, Metal Broker, Wolverhampton, which will include the cost post free to end of this year.

INVESTMENTS IN BRITISH MINES.—

Mr. MURCHISON publishes a QUARTERLY REVIEW OF BRITISH MINING, giving at the same time the POSITION and PROSPECTS of the MINES at the end of each Quarter, the DIVIDENDS PAID, &c.; price One Shilling. RELIABLE INFORMATION AND ADVICE will at any time be given by Mr. MURCHISON, either personally or by letter, at his Offices, No. 117, BISHOPSGATE-STREET WITHIN, LONDON, where copies of the above publication can be obtained.

OPINIONS OF THE PRESS ON MR. MURCHISON'S WORK ON BRITISH MINING, PUBLISHED IN 1856.

Mr. Murchison's new work on British Mines is attracting a great deal of attention, and is considered a very useful publication, and calculated to considerably improve the position of those mine investments.—*Mining Journal*.

The book will be found extremely valuable.—*Observer*.

A valuable guide to investors.—*Herapath*.

Mr. Murchison takes sound views upon the important subject of his book, and has made for a small sum, within the reach of all persons contemplating making investments in mining share that information which should prevent rash speculation and unproductive outlay of capital in mines.—*Morning Herald*.

A valuable little book.—*Globe*.

Of great interest to persons having capital employed, or who may be desirous of investing in mines.—*Morning Chronicle*.

As a guide for the investment of capital in mining operations is inestimable. One of the most valuable mining publications which has come under our notice, and contains more information than any other on the subject of which it treats.—*Derby Telegraph*.

Parties requiring information on mining investments will find no better and safer instructor than Mr. Murchison.—*Leeds Times*.

To those who wish to invest capital in British Mines, this work is of the first importance.—*Welshman*.

This is really a practical work for the capitalist.—*Stockport Advertiser*.

This work enables the capitalist to invest on sound principles; in truth, it is an excellent guide.—*Plymouth Journal*.

All who have invested, or intend to invest, in mines, would do well to consult this very useful work.— *Ipswich Express*.

Persons desirous to invest their capital in mining speculations, will find this work a very useful guide.— *Warwick Advertiser*.

We believe a more useful publication, or one more to be depended on, cannot be found.

*Plymouth Herald*.

Those interested in mining affairs, or who are desirous of becoming speculators should read carefully peruse the work.—*Monmouth Beacon*.

With such a work in print, it would be gross neglect in an investor not to consult it more laying out his capital.—*Poole Herald*.

Every person connected, or who thinks of connecting himself, with mining speculators should possess himself of this book.—*North Wales Chronicle*.

Mr. Murchison will be a safe and trustworthy guide, so far as British Mines are concerned.—*Bath Express*.

A very valuable book.—*Cornwall Gazette*.

All who have invested, or intend to invest, in mines should peruse this book at least.

It is deserving the attention of every one who seeks profitable investment of his capital.—*Brighton Examiner*.

It is full of carefully compiled and reliable information relative to all the known mines of the United Kingdom.—*Sheffield Free Press*.

THE NEWCASTLE CHRONICLE AND NORTHERN COUNTIES ADVERTISER. (ESTABLISHED 1764). Published every Saturday, price 2d., or quarterly 2s. 2d.

THE DAILY CHRONICLE AND NORTHERN COUNTIES ADVERTISER.

The best medium for mining, manufacturing, shipping, and trading advertisements in North of England.

186, Grey-street, Newcastle-upon-Tyne; 50, Howard-street, North Shields; 195, High-street, Sunderland.

## RAILWAY WAGONS.—WILLIAM A. ADAMS AND CO.

MIDLAND WORKS, BIRMINGHAM.  
BROAD AND NARROW GAUGE COAL AND IRONSTONE WAGONS. IN STOCK—FOR SALE OR HIRE.

THE RAILWAY CARRIAGE COMPANY, OLDSBURY, NEAR BIRMINGHAM. MANUFACTURERS OF EVERY DESCRIPTION OF RAILWAY PLANT AND IRONWORK. NEW AND SECOND-HAND RAILWAY WAGONS ALWAYS IN STOCK FOR SALE OR HIRE. LONDON OFFICES, NO. 1, MOORGATE.

THE BIRMINGHAM WAGON COMPANY (LIMITED) HAS RAILWAY WAGONS FOR HIRE. Apply to the SECRETARY, 3, Newhall-street, Birmingham.

RAILWAY WAGONS.—JONATHAN KETLEY, SOHO CARRIAGE AND WAGON WORKS, NEAR BIRMINGHAM. ALL DESCRIPTIONS OF RAILWAY WAGONS FOR SALE OR HIRE. MANUFACTURERS OF ALL KINDS OF RAILWAY IRONWORK.

RAILWAY WAGONS.—TO BE LET ON HIRE, BROAD and NARROW GAUGE RAILWAY WAGONS.—Apply to JAMES MURPHY, C.E., Railway Works, Newport, Monmouthshire.

WILLIAM HARRISON AND CAMM HAVE ON HAND RAILWAY, COAL, COKE, AND MINERAL WAGONS, ON SALE OR HIRE, AT THE ROTHERHAM WAGON WORKS, MASBRO.

JAMES RUSSELL AND SONS, CROWN TUBE WORKS, WEDNESBURY, STAFFORDSHIRE. WAREHOUSE, 81, UPPER GROUND STREET, BLACKFRIARS, LONDON, S. The Original Inventors and First Manufacturers of the Patent Wrought-Iron Tubes for Gas, Steam, Water, &c. Enamelled Tubing, and Glazed ditto. Russell and Howell's Homogeneous Tubes. And agents for G. F. Muntz's Solid Brass Tubes. Every variety of fittings. Trade mark,

LOYD AND LLOYD, ALBION TUBE WORKS, BIRMINGHAM, MANUFACTURERS OF PATENT LAP-WELDED IRON TUBES, FOR LOCOMOTIVE, MARINE, AND STATIONARY BOILERS. IMPROVED HOMOGENEOUS METAL TUBES. ALL DESCRIPTIONS OF TUBES AND FITTINGS FOR GAS, STEAM AND WATER, PLAIN, GALVANISED AND ENAMELED. GUN-METAL STEAM GLAND COCKS, WATER GAUGES, &c.

S HORTRIDGE, HOWELL, AND CO., HARTFORD STEEL WORKS, SHEFFIELD, SOLE MANUFACTURERS OF HOWELL'S PATENT HOMOGENEOUS METAL PLATES FOR BOILERS, LOCOMOTIVE FIRE BOXES, and TUBES, COMBINING THE STRENGTH of STEEL with the MALLEABILITY of COPPER. RUSSELL and HOWELL'S PATENT CAST STEEL TUBES. McCONNELL'S PATENT HOLLOW RAILWAY AXLES.—For prices and terms, apply to SHORTRIDGE, HOWELL, and CO., Hartford Steel Works, Sheffield; or Messrs. HARVEY and CO., 12, Haymarket, London.

FARRAR'S PATENT STEEL COMPANY, WARDSEND STEEL WORKS, SHEFFIELD, MANUFACTURERS of BEST CAST STEEL, MALLEABLE and MILD STEEL CASTINGS, SUPERIOR CAST-STEEL FILES, &c. CALL the ATTENTION of ENGINEERS and all users of FIRST-CLASS STEEL to the GREAT SUPERIORITY of STEEL MANUFACTURED under this PATENT. Prices:—

First quality ..... £50 per ton.  
Second quality ..... 40 "  
Third quality ..... 30 "

Wardsend Steel Works, LONDON OFFICE, 21, BOW LANE, CANNON STREET WEST, E.C., Where all communications are to be addressed.

CORNISH BORER STEEL.—Upwards of ONE HUNDRED and SIXTY MINES are SUPPLIED with this STEEL, and the DEMAND for it is RAPIDLY INCREASING.—For terms, apply to R. MURRAY and CO., Forest Works, near Coleford, Gloucestershire.

London Agent:—Mr. W. T. HENDRY, 71, Cannon-street West, E.C.

TO COAL OWNERS AND COKE BURNERS.

MACKWORTH'S PATENT COAL WASHER, OR PURIFIER.—This MACHINE will EXTRACT the SHALE and ALL HEAVY IMPURITIES from SMALL COAL at a COST of TWO PENCE PER TON. For particulars and references, apply to the makers, A. and T. FAR, Temple-gate Works, Bristol; or to Mr. JOS. RIDER, Basinghall-street, Leeds.

COALS.—GEORGE J. COCKERELL AND CO., Coal Merchants to Her Majesty. Cash, 2s. per ton. Best coals only.

G E O R G E J. C O C K E R E L L A N D C O., Central Office, 13, Cornhill, E.C.

G E O R G E J. C O C K E R E L L A N D C O., Eaton Wharf, Grosvenor Canal, and Office, 14, Lower Belgrave-place, Pimlico, S.W.

G E O R G E J. C O C K E R E L L A N D C O., Purfleet Wharf, Earl-street, Blackfriars, E.C.

G E O R G E J. C O C K E R E L L A N D C O., Sunderland Wharf, Peckham Canal, S.E.

WIRE-ROPE TESTING.

PUBLIC TEST of A. J. HUTCHINGS AND CO.'S PATENT WIRE-ROPE at LIVERPOOL, FEBRUARY 27, 1861. [From the *Daily Post* of March 1, 1861.]

On Wednesday, the 27th of February, a series of EXPERIMENTS on WIRE-ROPE took place at the Corporation Testing Works, King's Dock. The specimens tested were manufactured by the well-known firm of A. J. HUTCHINGS and CO., of Millwall, London, the Contractors to the Lords of the Admiralty and various foreign Governments, the character of whose rope is so well known in this country, as well as all parts of the Continent. Capt. Duncraft, of H.M.S. *Hastings*, and a number of other gentlemen connected with shipping, were present to witness the experiments, all of which were considered highly satisfactory, and in every respect sustained the reputation of the manufacturers. The following are the results of the experiments:—

An 8 in. rope bore 70 tons WITHOUT BREAKING. Circumference and breaking strain.

10 $\frac{1}{2}$  tons | 2 $\frac{1}{2}$  " | 3 " | 3 $\frac{1}{2}$  " | 3 $\frac{3}{4}$  " | 4 " | 4 $\frac{1}{4}$  " | 10 $\frac{1}{2}$  tons | 20 tons | 27 tons | 29 tons | 32 $\frac{1}{2}$  tons | 45 $\frac{1}{4}$  tons N.B.—The 2 $\frac{1}{2}$ , 3, and 4 in. ropes were the sizes actually tested. The remaining sizes and strains are comparative.

THE ABOVE ROPE ARE FOR COLLIERY USE.

Size. Hutchings and Co.'s wire-ropes for ships' rigging. Tested Feb. 27, 1861. Newall and Co.'s Test of Oct. 29, 1860. Garnock, Bibby, and Co.'s Test, Oct. 29, 1860.

2 5 tons 15 cwt. 7 tons 15 cwt. 8 tons 16 cwt.

2 $\frac{1}{2}$  11 " 14 " 8 " 8 " 16 cwt.

3 $\frac{1}{2}$  16 " 10 " 8 " 8 " 16 cwt.

3 $\frac{3}{4}$  22 " 8 " 8 " 8 " 16 cwt.

4 $\frac{1}{2}$  23 " 10 " 16 " 10 " 16 " 16 cwt.

4 29 " 10 " 18 " 15 " 18 " 16 cwt.

## THE MINING SHARE LIST.

## DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last Paid.
4000 Bedford United (copper), Tavistock	2 6 8. 4% 4% 5	12 7 0. 0 3 6	June, 1861			
240 Boscean (tin), St. Just	20 10 0. 50	35 0. 0 1 10 0	May, 1861			
280 Botallack (tin, copper), St. Just	91 5 0. 210	443 5 0. 2 10 0	Feb, 1860			
1000 Car Brea (copper, tin), Illogan	15 6 0. 70	269 10 0. 2 0 0	Feb, 1860			
2048 Carnyorth (tin), St. Just	3 10 0. 15	19 6. 0 2 0 0	Sept, 1860			
260 Cefn Cwm Brwyno (lead), Cardigan	23 0 0. 33	9 0. 0 4 0 0	April, 1861			
5000 Connore (copper, sulphur) [L. £11.]	1 0 0. 34	0 9. 0 0 9 0	July, 1860			
2450 Cook's Kitchen (copper), Illogan	17 0 0. 25	8 0 0. 0 8 0	May, 1861			
12000 Copper Miners of England	25 0 0. 25	7 1/4 per cent.	Half-yearly.			
350000 Ditto ditto (stock)	100 0 0. 24	1 per cent.	Half-yearly.			
1055 Craddock Moor (copper), St. Cleer*	8 0 0. 26	5 13 0. 0 7 1/2	July, 1861			
867 Cwrt Eru (lead), Cardiganshire	7 10 0. 16	5 8 0. 0 1 0 0	June, 1861			
128 Cwmyndaw (lead), Cardiganshire	60 0 0. 240	227 10 0. 0 5 0	May, 1861			
250 Derwent Mines (all.-lead), Durham	300 0 0. 180	142 0 0. 0 5 0	June, 1861			
1024 Devon G. Con. (cop.), Tavist. [S.E.]	1 0 0. 355	350 355	760 0 0. 7 0 0	July, 1861		
2550 Doicorth (copper, tin), Camborne*	128 17 6. 510	635 10 0. 7 0 0	Aug, 1861			
512 East Bassett (cop.), Redruth [S.E.]	29 10 0. 76	87 0. 0 5 0 0	July, 1861			
6144 East Cadron (copper), St. Cleer [S.E.]	2 14 6. 24% 25%	0 17 6. 0 10 0	July, 1861			
300 East Darren (lead), Cardiganshire*	32 0 0. 67	77 10 0. 1 0 0	Aug, 1861			
2048 East Wheal Lovell (tin), Wendron	2 10 0. —	0 5 0. 0 5 0 0	June, 1861			
1490 Eynam Mining Co. (lead), Derbyshire	5 0 0. —	20 3 4. 0 10 0	May, 1861			
4940 Fowey Consols (copper), Twardreath	4 0 0. 5	41 9 2. 0 2 8	June, 1860			
2550 Foxdale, Isle of Man, Limited (lead)	25 0 0. 35	61 8 3. 0 1 0 0	Dec, 1860			
5000 Frank Mills (lead), Devon	3 18 6. 4%	0 11 0. 0 3 0 0	July, 1861			
6000 Great South Tolquis [S.E.], Redruth	0 14 6. 33% 41%	7 13 6. 0 5 0 0	Feb, 1861			
1788 Great Wheal Fortune, Brecon	18 6 0. 11% 12%	1 0 0. 0 10 0	July, 1861			
5000 Great Wh. Vor (tin, cop.), Helston [S.E.]	40 0 0. 6	0 5 0. 0 5 0 0	Mar, 1861			
1024 Herodsfoot (id.), near Liskeard [S.E.]	92 6 2. —	6 15 0. 0 15 0	Feb, 1861			
1000 Hibernal Min. Company	2 10 0. 95	1001 0. 0 5 0 0	May, 1860			
169 Levan (copper, tin), St. Just	—	375 10 0. 2 0 0	Aug, 1861			
400 Lishorne (lead), Cardiganshire, Wales*	18 15 0. 125	4 0 0. 0 5 0 0	July, 1861			
9000 Marks Valley (copper), Cardon	4 10 6. 101/4	1 1 0. 0 5 0 0	July, 1861			
5000 Mendip Hills (lead), Somerset	3 15 0. 14	2 0 0. 0 2 6 0	May, 1860			
1800 Minera Mining Co. [L.], Wrexham	25 0 0. 180	75 0. 9 4 0 0	Aug, 1861			
3000 Mining Co. of Ireland (cop., lead, coal)	7 0 0. 144	14 7 11 0. 7 0 0	June, 1861			
640 Mount Pleasant, Mold	4 0 0. 25	12 15 7. 1 0 0	July, 1861			
6000 New Birch Tor and Vitifer Consols	1 6 6. 2	2 6 0. 0 2 6 0	May, 1861			
6000 North Downs (copper) Redruth	2 3 4. 5% 4% 4%	2 6 0. 0 2 6 0	Aug, 1861			
1366 North Grambler, Redruth	2 7 6. 6	10 0 0. 0 10 0	Mar, 1861			
6000 North Great Work, Breage	1 3 0. 4%	2 0 0. 0 2 0 0	May, 1860			
5000 Osred (lead), Flintshire	0 8 0. 14	6 6 0. 0 9 0 0	May, 1861			
6400 Par Consols (cop.), St. Blazey [S.E.]	1 2 6. 94% 84% 8%	36 4 6. 0 5 0 0	July, 1861			
200 Parvys Mines (copper), Anglesey [L.]	60 0 0. —	7 10 0. 2 10 0	April, 1861			
200 Phoenix (copper, tin), Linkinhorne	100 0 0. 435	449 10 0. 55 0	May, 1861			
1772 Polberro (tin), St. Agnes	—	6 9 6. 0 15 0	Aug, 1861			
1120 Providence (tin), Uny Lelant [S.E.]	10 6 7. 35	89 15 0. 1 0 0	May, 1861			
16 Rhosneigr	50 0 0. —	1250 0. 0 100 0	—			
512 South Cadron (cop.), St. Cleer* [S.E.]	1 5 0. 305	351 0. 0 5 0 0	July, 1861			
512 South Tolquis (cop.), Redruth, Cornwall*	8 0 0. 40	103 10 0. 1 0 0	July, 1861			
496 South Wheal Frances, Illogan* [L.]	18 19 0. 122% 125 130	355 5 0. 0 1 0 0	July, 1861			
280 Spearno Moor (tin, copper), St. Just	31 17 9. 45	9 15 0. 0 1 0 0	June, 1861			
910 St. Ives Consols (tin), St. Ives	8 0 0. 31	484 0. 0 0 15 0	May, 1861			
9600 Tamar Con. (all.-id.), Berraclaston [S.E.]	4 10 0. 13	5 6 0. 0 2 6 0	Jan, 1861			
6000 Tincroft (cop., tin), Pool, Illogan [S.E.]	9 0 0. 51% 5 5% 5 5%	10 8 6 0. 0 5 0 0	Feb, 1861			
6000 Tolvadden (copper), Marazion	—	6 13 6 0. 0 3 0 0	Mar, 1860			
572 Trelyon Consols (tin), St. Ives	11 10 0. 12%	7 0 0. 0 10 0	Sept, 1860			
200 Trumpet Consols (tin), near Helston	57 10 0. 160	52 0 0. 0 2 0 0	May, 1861			
1024 Wendron Consols (tin), Wendron	11 10 10. 16	8 15 0. 0 1 0 0	Jan, 1861			
6000 West Bassett (copper), Illogan [S.E.]	1 10 0. 16	21 15 0. 0 5 0 0	July, 1861			
60 West Burton Gill (lead), Yorkshire	50 0 0. —	14 10 0. 3 0 0	June, 1861			
1024 West Cadron (cop.), Liskeard [S.E.]	5 0 0. 40	98 1 3. 0 1 0 0	July, 1861			
256 West Damself (copper), Marazion	37 0 0. 55	45 0 0. 0 1 0 0	May, 1860			
6000 West Fowey Consols (tin and copper)	7 10 0. 5	315 0 0. 0 2 0 0	May, 1861			
512 Wheal Bassett (copper), Illogan [S.E.]	5 2 6. 90	572 10 0. 2 0 0	Aug, 1861			
5000 Wheal Clifford (cop.), Redruth [S.E.]	5 0 0. 95	929 0 0. 2 0 0	May, 1861			
5000 Wheal Cliff (cop.), Redruth	150 0. —	83 0 0. 0 3 0 0	May, 1861			
2060 Wheal Falmouth and Sperrys	2 5 0. 8	10 0 0. 0 10 0	Feb, 1861			
128 Wheal Friendship (copper), Devon	50 0 0. 90	2400 10 0. 5 0 0	Feb, 1861			
512 Wheal Jane (silver-lead), Ken	3 10 0. 18	10 10 0. 1 0 0	Feb, 1860			
1024 Wheal Kitty (tin), Uny Lelant [S.E.]	1 7 2 0. 31	8 0 0. 0 10 0	Sept, 1860			
4800 Wheal Ludcote (lead), St. Ives	2 10 8. 3% 31% 31%	1 8 0 0. 0 4 0 0	July, 1861			
896 Wh. Margaret (tin), Uny Lel. [S.E.]	9 17 6. 42%	38 40	68 0 0. 1 10 0	May, 1861		
100 Wh. Mary (tin), Lelant	36 2 6. 440	280 5 0. 7 0 0	June, 1860			
1024 Wh. Mary Ann (id.), Menheniot [S.E.]	8 0 0. 84% 9 1/2%	83 17 6. 0 10 0	June, 1861			
80 Wheal Owles, St. Just, Cornwall	70 0 0. 300	280 13 0. 5 0 0	Aug, 1861			
8000 Wicklow (copper) [L.], Wicklow	5 0 0. 59	41 17 6. 2 12 6	Mar, 1861			

[\* Dividends paid every two months. † Dividends paid every three months.]

## MINES WITH DIVIDENDS IN ABEYANCE.

Shares.	Mines.	Paid.	Last Pr.	Business.	Dividends Per Share.	Last Paid.
700 Aberdovey (silver-lead), Merioneth	1 10 0. 30	0 10 0. 0 10 0	Mar, 1859			
512 Alfred Consols (cop.), Phillack [S.E.]	21 17 1. 1 1/2	20 3 0. 0 2 6	April, 1859			
1624 Balwiesford (tin), St. Just	11 5 0. 12	12 5 0. 0 5 0	Jan, 1854			
1200 Brightside & Froggatt Grove, Derbyshire	3 0 0. 31	3 0 0. 0 3 0	April, 1856			
2500 Central Min. (lead) [L. £5.]	0 15 0. 51%	0 4 0. 0 4 0	Sept, 1859			
6000 Charlotte United, Perranuthnoe	2 3 2. 1 1/2	0 13 0. 0 1 0	Sept, 1859			
2000 Colincloch (copper), Lanner	5 5 0. 12	3 5 0. 0 8 0	Dec, 1860			
256 Condurrow (cop.), Camborne	20 0 0. 60	85 0 0. 2 0 0	June, 1857			
2						